

V. 4 #23
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CURRENT NOTES AND COMMENTS

NEW YORK, Aug. 12.—Forty-seven sign posts have been shipped from a Michigan factory, to be set up and mark the route of the endurance run as far as Albany. It is probable that about the same number will be required to mark the remainder of the route. The map of the route is now being prepared by the A. C. A. and will be reproduced in 12 sections, one for each half day of the run. At the A. C. A. 75 is the conservative estimate of the vehicles likely to participate. Walter H. Stearns, of the New York Automobile Exchange, who has been laying out the course, thinks there will be 150. Mr. Stearns, by the way, told your correspondent today that he had been promised that the Nelson Hill, on which the climbing contest for the President's Cup will take place, will be repaired a week before the trial. He said it is now a rough mountain road about one-third of a mile in length, made up of a series of ledges, some of which, by his gradometer, showed a 28 percent grade. An engineer is now surveying it and will report in a day or two.

Pan-American Offers Cup

NEW YORK, Aug. 12.—The troubles between the A. C. A. and the Pan-American people seem to have ended. Mr. Bostwick is back from Buffalo, whither he went to arrange for privileges to run the Buffalo-Erie race. It is expected that by next Wednesday morning permission over the whole course will have been obtained from the various municipalities.

The Pan-American people have offered a cup of from \$500 to \$1,000 in value for the winner, in addition to the purse and sweepstakes. The A. C. A. is to add \$1,000, and the sweepstakes is \$100 entrance fee and \$50 extra for starters.

Automobile Week at Buffalo

NEW YORK, Aug. 12.—The following is a rough outline of the program so far determined for automobile week at Buffalo, Sept. 16-21:

Monday, Sept. 16.—Exhibition of ma-

chines which have taken part in the endurance race arranged in the order in which they arrive. It is proposed to leave these on exhibition until about 3 o'clock, and it is suggested that if possible to have them appear in their war paint of dust and mud just as they were when they arrived, but this will not be compulsory.

Tuesday, Sept. 17.—In the morning gasoline consumption test for gasoline vehicles. Afternoon, hill climbing contest, all classes.

Wednesday, Sept. 18.—Morning, one mile open road race; time over one kilometer to be taken. Afternoon, water and gasoline consumption contest for steam vehicles.

Thursday, Sept. 19.—Morning, gymkana. Afternoon, obstacle contests.

Friday, Sept. 20.—Erie to Buffalo road race.

To Race at Newport

So far as the consent of the authorities is concerned Mr. Vanderbilt has been successful in his endeavors to promote a race meet on the Ocean Drive, at Newport, on August 30. Armed with a petition signed by many of the residents on the drive and by substantial business men his emissaries appeared before the council last week and asked for the necessary permission for a meeting to be held by the National Automobile Racing Association, of Newport. It was granted by an unanimous vote of the council, but a movement is on foot among some opponents of the plan to prevent its consummation by injunction.

Each race will be one circuit of the drive, or 9 miles. The events will be as follows:

Motorcycles, two or three wheels, prize given by Mrs. John R. Drexel.

All classes of steam motor carriages, prize given by John R. Livermore.

All classes of electric racing machines, prize not announced.

Special for De Dion 5-horsepower voitur-ettes in ordinary racing trim; first prize given by William K. Vanderbilt, Jr.; second prize by H. O. Havemeyer, Jr.

Gasoline machines not developing more than 12 horsepower; prizes not announced.

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Gasoline machines developing more than 12 horsepower; first prize by Mrs. William K. Vanderbilt, Jr.; second by Mrs. Hermann Oelrichs.

Winners of all classes for a prize offered by Mrs. O. H. P. Belmont.

The judges appointed are J. Dunbar Wright, Arthur T. Kemp, Spencer C. Crane, Edward G. Haywood, Congressman Bull, O. H. P. Belmont and Henry Bull, Jr.

The association has learned the conditions imposed by the city council committee, which will supervise the races, and accepted them. The association will police the course thoroughly at its own expense and guarantee everybody against damages resulting from the races. Fifty special officers will be employed about the track, under the supervision of Chief of Police Richards.

The New York Show

NEW YORK, Aug. 12.—The annual automobile show at Madison Square Garden presents favorable prospects. Secretary Young told your correspondent today that contracts had been signed by many of the leading concerns and that the Duryea Power Co. had been added to the list. He thinks the talk of trouble comes mainly from one or two exhibitors, who are dissatisfied with the allotments of space.

Route of Endurance Test

Monday, Sept. 9.—Yonkers (17), Dobbs Ferry (23), Tarrytown (27), Ossining (33), Peekskill (44), Cold Spring (56), Fishkill Village (64), Fishkill Landing (69), Wappinger's Falls (76), Poughkeepsie (84). Day's run, 84 miles.

Tuesday, Sept. 10.—Hyde Park (90), Rhinebeck (100), Red Hook (106), Nevis (111), Blue Stone (115), Hudson (125), Stockport (131), Stuyvesant Falls (134), Kinderhook (138), Schodack Landing (147), Greenbush (153), Albany (159). Day's run, 75 miles.

Wednesday, Sept. 11.—Newtonville (165), Schenectady (178), Hoffman's Ferry (187), Amsterdam (193), Tribes Hill (199), Fonda (204), Palatine Bridge (216), Palatine Church (221), Little Falls (234), Herkimer (242). Day's run, 82 miles.

Thursday, Sept. 12.—Ilion (245), Frankfort (247), Utica (256), New Hartford (260), Kirkland (265), Vernon (273), One-

da Castle (278), Oneida (280), Quality Hill (287), Chittenango (291), Fayetteville (299) and Syracuse (307). Day's run, 65 miles.

Friday, Sept. 13.—Fairmount (311), Camillus (315), Weedsport (329), Port Byron (332), Montezuma (338), Clyde (348), Lyons (335), Newark (364), Palmyra (371), Macedon (376), Pittsford (387), Rochester (394). Day's run, 87 miles.

Saturday, Sept. 14.—Gates (398), Churchville (409), Byron (418), Newkirk (423), Batavia (427), Corfu (439), Crittenden (443), Mill Grove (447), Bowmansville (455), Buffalo (464). Day's run, 69 miles.

Extraordinary Demand in Paris

Never since the early days of the automobile industry have French manufacturers been so crowded with orders. Many are refusing them and this has put up the price of second-hand automobiles to unheard prices, some of which even sell at about the cost price, so intense is the demand. Charron, of the Charron, Girardot & Voigt firm, said: "I sold seven new vehicles yesterday and have but four second-hand left over. One is an 8-horse power Panhard spider, with Michelin tires. The speed is about 50 kilometers on even ground. We will not sell it for less than \$2,200. Another is an 8-horse power Panhard omnibus with six seats. It originally cost \$4,000, and we refused an offer of \$3,000."

A Clement voiturette, with two seats and 6-horse power, will not be sold for less than \$1,200, or a 7-horse power with four seats for less than \$1,000.

At the Company Routiere several splendid vehicles were shown, some of which bore tags saying "put aside or retained." There were a Peugeot of 12-horse power and six seats for \$3,100; a 16-horse power Morse, finished last June, for \$3,600; 7-horse power Peugeot, \$1,800. At the A. C. F. was a De Dietrich, 11-horse power, Michelin tires, \$2,100, and a Darracq voiturette for \$800. All these prices are about 50 per cent higher than a year ago. That the Paris-Berlin race was a most sensational factor in the activity of the business can now not be denied by any one. Letters from all Europe pour in for catalogues and inquiries.

A cablegram from Paris, dated last Saturday, adds the following quotation from

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remarks made by the Marquis de Dion. "We are doing over 1,000,000 francs per month, made up as follows: One hundred and seventy voitures of an average price of 4,800 francs each, 400 motors and 200,000 francs' worth of detached pieces."

M. Rene de Knyff, of the Panhard-Levasor Co., told the same story. Since the Paris-Berlin race they have received orders for 5,000,000 francs and others are still coming in.

De Knyff May Come

New York, Aug. 10.—Positive information reached your correspondent today from one who had seen the letter that Rene de Knyff the record breaking French champion, has inquired of an officer of a leading automobile company particulars of the proposed Buffalo-Erie race with the intention of coming over and competing. It is said that could the Newport race be postponed to a little later date than Aug. 30 he would be glad to come over and compete in it.

Makers' Association Wants Members

A circular letter has been sent to members of the manufacturers' association urging them to make an effort to increase the membership. Owing to the limited membership so far attained, it says, the efforts of the association are necessarily hampered and restricted. The association now has about 60 members and the officers feel that it ought to be possible to largely increase the number before the annual meeting.

The officers are right, but the methods so far pursued are wrong. The association's light has been hidden. The trade hears of it only semi-occasionally. Its gatherings are infrequent. There is nothing about the association to excite interest or enthusiasm. Not more than one-half of the trade knows what the association is for, where it is located, who its officers are, or what they are doing or have done.

Horseless Funeral Plans

Charles T. Earl, of Brooklyn, once made a record on a bicycle by running away with a Springfield handicap when the other fellows were quarreling in the back stretch as to who would make the pace. Charles also rode a mile, straight-away, on Long Island and did time which had never been done be-

fore. Now he purposes making a record in the undertaking line. Charles is the first son of a 40-year established undertaker and is to be given charge of the business. He will have horseless funerals and is going to commence by introducing a horseless undertakers' wagon.

Mr. Earl called at the eastern office of this paper and gave his views on the subject, which were, in short, that the undertaking business was a solemn, touchy and peculiar business and that anything radical would be sat down upon by the rest of the undertakers. So he will commence with a wagon and if the mourners take to it kindly he will introduce a horseless hearse. Mr. Earl says that the average horse doesn't seem to appreciate the solemnity of the occasion, that it scares at the little angels on tombstones and that he would prefer a balking automobile to a runaway team any day.

Records in France

Following is a table of records recognized as official by the Automobile Club of France for one mile, various machines, under various conditions:

Motor bicycles, assisted by pedaling, Bucquet, 1½ horsepower Werner, 1:56 3-5.

Motocycles, with one seat occupied, Beconnals, 8 horsepower Songin, 1:07 2-5.

Voiturette, weighing up to 400 kilos, with one or two seats occupied, Oury, 6 horsepower Renault, 1:40 2-5.

Light vehicles, from 400 to 650 kilos, with one or two seats occupied, Baras, 16 horsepower Darracq, 1:15 2-5.

Vehicles, with one or two seats occupied, Loraine-Barrow, 35 horsepower Mercedes, 1:12 2-5; with two or four seats occupied, Stern-Lubeck, 35 horsepower Mercedes, 1:21.

Steam vehicles, voitures or light, Leon Serpollet, Gardner-Serpollet, 2:00 4-5; vehicle having two seats, L. Serpollet, Gardner-Serpollet, 1:11; vehicles having more than two seats, Rutishauer, Gardner-Serpollet, 1:32.

Electric vehicles, with one or two seats, Notbeck, Columbia, 2:30.

The records for one kilometer are also given, as follows:

Motor bicycle, pedaling, Bucquet, 1½ horsepower Werner, 1:08.

Motocycles, one seat occupied, Beconnals, 8 horsepower Songin, and Caron, 8 horsepower de Dion-Bouton, 39 1-5s.

Voiturette, Oury, 6 horsepower Renault, 1:02 1-5.

Light vehicles, 400 to 650 kilos, Baras, 16 horsepower Darracq, 44 3-5s.

Vehicles, one or two seats, Werner, 35 horsepower Mercedes, 41 4-5s., two to four

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seats, Stern-Lubecke, 35 horsepower Mercedes, \$144-58.

Steam vehicles, volturesses or light, L. Serpollet, Gardner-Serpollet, 1:05 3-5; one or two seats, Leon Serpollet, Gardner-Serpollet, 35 4-58.

Electric vehicles, with one or two seats, C. Jenatzy on a Jenatzy in 34s.

Tax System of Belgium

In Belgium the tax on automobiles is different in almost every one of the nine departments. In the province of Brabant, including Brussels, the tax on motorcycles is 30 francs, or \$6, and in Antwerp only 20 francs, or \$4. In Flanders Oriental the tax is 15 francs, or \$3 per wheel. In Namur, \$2. On vehicles the tax is as follows: In Brabant and Antwerp, 50 francs, or \$10; in Hainaut, vehicles with three seats, 30 francs, or \$6, and more than three seats, \$16. The Moto Club has made a request to the different provinces to make the tax uniform.

A Get-Rich Quick Mixture

Walter Scott Stowager, an inventor at Rochester, may have discovered something of the greatest possible interest to automobilists or he may, like thousands who have gone before, find that his discovery amounts to nothing when he attempts to make practical use of it. Mr. Stowager has discovered what he believes to be a new liquid gas which he thinks will take the place of gasoline and similar combustible matter. He has taken into his confidence Prof. S. H. Lattimore, of the State Agricultural Department, who seems to be convinced of the truth of his claims. Mr. Stowager has demonstrated that his gas, whatever it may be, will produce a brilliant light. He announces that it will take the place of the present methods of lighting railway cars, steamboats and other vehicles as well as private residences. The most remarkable part of the story is that in the manufacture of the gas there remains a residue of such value that the owner can become rich by making and dispensing the gas without charge!

Use of Too Light Material

"Some of the automobile manufacturers," said a Rochester steam wagonmaker last week, "are using too light tubing for their frame construction. Look here," and he handed the writer a section of 16 gauge

tubing, a broken part of a steam carriage frame which had come to him for repairs. "We are using 8 to 10 gauge tubing and it is my opinion that none of a lighter gauge can be successful in automobile construction."

Mr. Bunce, of Marvin, Bunce & Schaefer, also called attention to the light spokes some of the companies are using, and stated that he had seen many wheels go wrong because of them.

From Buffalo to Boston

Arthur J. Eddy recently traveled from Chicago to Buffalo, 580 miles, over a route prepared for him by this paper, in 3½ days. He reports the roads poor as far as Cleveland, thence excellent. Near Painesville, O., a strange accident happened. A 5-inch railroad spike had evidently been tripped up by one of the forward wheels and caught the tire of the after wheel with the sharp point. It cut diagonally clean through the rubber and by the revolutions of the wheel was gradually pounded in so that nothing but the head of the spike could be seen. It was not until long after the spike was picked up that the air left the tire. It was a rusty spike, but the head of it was bright from the polishing it got while sticking in the wheel. Mr. Eddy left Buffalo for Boston.

All This Capital Idle!

Nothing definite is yet available for publication concerning the sale of the Keating plant to the Eisenhuth company. Meanwhile that concern has held its annual meeting and elected these directors: Isaac E. Gates, John A. Hilton, John W. Eisenhuth, New York; George C. McMullen, Waretown, N. Y.; George T. Schull, Carthage, N. Y.; George F. McQuillan, Portland. Treasurer, David H. Milton. Clerk, George F. McQuillan. The corporation was organized under the laws of Maine December 7, 1898, with a capital stock of \$1,000,000 to manufacture automobiles. On November 27, 1899, the capital stock was increased to \$10,000,000. The company owns 21 patents on inventions of John W. Eisenhuth.

General Carriage Co. Fails

NEW YORK, Aug. 12.—A receiver was appointed today for the General Carriage Co., an automobile concern that was started

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about two years ago. It was capitalized at \$20,000,000. It claimed ownership of a franchise to run stages on any street in New York city. It has a small electric carriage plant on 43d street and has operated about 20 cabs, but never earned a dividend. Its stock has been quoted around \$1.50 per share of late.

In November, 1899, the stock was selling for \$40 a share, and two months later it was advanced to \$80. Next day it was quoted at \$135, and two days later it soared to \$200 a share. Within a week after the \$200 mark was reached the stock slumped and was selling for \$50 a share. Then began a most remarkable manipulation to compel an interest owning 8,000 shares to sell out to those in control. The stock was forced down to \$2 a share, when the minority interest capitulated.

New Industries

The Long Island Traction Co. promises to have its automobile bus route established between the villages of Freeport, Mineola, Jamaica and Valley Stream by September 15.

Captain Horace Wilson and others, of the Wilmington (Del.) Steamboat Co., are negotiating for automobile omnibuses to run from the central part of the city to the wharves of the steamboat company.

The Oneida (N. Y.) Automobile Co., of Oneida, Madison County, has been incorporated at Albany with a capital of \$5,000. The directors are Theodore Coles, H. M. Reynolds and S. Allen Clark, of Oneida.

Accommodations at Buffalo

Automobile and bicycle visitors to the Pan-American will find in John C. Dunham, manager of the Park Inn, Buffalo, a genial and efficient host. Mr. Dunham was for a long time manager of the Buffalo Cycle Co., maker of the Niagara bicycle, and owns a pretty residence at 1392 Amherst street, which is opposite the City Park or Park Meadows. The Dunham residence now known as the Park Inn is beautifully situated and is only three-quarters of a mile from the Amherst street gate of the exposition. The Country Club occupied the Park Inn for some time, and it is fitted with extensive kitchens, dining rooms and porches.

The Hotel Lenox, North street, is near the

aristocratic Delaware avenue, and is one of the most beautiful hotels in Buffalo, and is high grade in every respect. The Buffalo Automobile Club has its club rooms in the Lenox and splendid storage and repair facilities are offered by Ellicott Evans, a block away. Many of the leading automobilists are now staying there.

Gates' Panhard in Action

Chicago automobile enthusiasts missed a rare treat last Sunday when an impromptu brush occurred between John W. Gates' new 12-horse power Panhard, in the hands of three Frenchmen, Mr. Picard being among the number, and Edwin F. Brown, on his Winton. The writer was speeding northward, toward Evanston, when, turning a bend in the drive, he came upon the huge Panhard standing near the curb, with three active workers cleaning it for the purpose of taking a photograph. Surrounding the vehicle was a crowd of anxious spectators, mostly cyclists, which the writer joined.

After a few words of explanation as to what caused the stop, out of the north came a dust cloud, out of which eventually loomed a big Winton with Mr. Brown up. As he came to a standstill he was greeted in French, Latin and other tongues, which created a laugh all round.

When everything was ready for starting Brown was invited by Picard, who usually drives a Motorette, to indulge in a friendly race, but declined in a way that told he was aching for a chance to show the Gates machine that "there were others." The writer mounted his motor tricycle and waited for the big machines to start, feeling sure they would not travel so fast as to distance him, owing to the stops necessary for turning corners, etc. But how sad the awakening. They were off before the tricycle could be started, and in less time than it takes to tell it, were vanishing down Sheridan drive at a pace that would put the Lake Shore limited to the blush. While the tricycle could get over ground at 25 miles an hour, there was no sign of the two big machines during the remainder of the journey. Although Brown had a lead at the start, he did not keep it long. That Panhard started with a roar that would have put the bombardment of Mantanzas to shame and traveled so fast that, although the boulevard had been sprinkled a few minutes

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before, nothing but dust was visible for minutes after the machines passed. People on the walks stood with open eyes and mouths and wondered what was coming next. Then the writer sped by while the crowd yelled "ice."

Must Pay for Crawling

Representatives of St. Louis automobilism called on the city fathers last week, to protest against threatened automobile legislation.

To Captain Boyce, chairman of the committee which had the bills under consideration, they detailed their ideas in the matter. In the first place they considered a license tax of \$10 a year entirely too much. They thought a yearly license of \$5 would be ample. Then they objected to the bill prohibiting a higher rate of speed than eight miles on the streets and highways and six miles in the parks. They thought horseless vehicles could be propelled at a rate of 15 miles an hour with perfect safety.

Captain Boyce informed his visitors that a tax of \$10 per year on an automobile only amounted to a trifle more than 80 cents a month, and he thought public-minded citizens able to afford the luxury of an automobile should be willing to contribute that much to the city. As for the speed ordinance, he reminded them that street cars were only allowed to run over the down-town streets at the rate of six miles an hour. The visit of the automobile delegation failed to accomplish its purpose, for the bill requiring an annual tax of \$10 for each machine was ordered to engrossment at the meeting which followed.

A Coachman's Perquisite

In connection with the purchasing of automobiles, a curious perquisite of the coachman has come to light. A local automobile dealer told a Post Express reporter that recently a man came to him to negotiate for the purchase of a machine. The next day the man's coachman came to the establishment and inquired of the dealer how much he, the coachman, was going to get out of the deal.

"A good cigar," said the dealer, "and you can have it now if you want it."

The coachman was wrath. Whenever his employer purchased a horse, he said, he had always gotten a "rake off" of about \$25 from the dealer and he now demanded

\$75 as his commission for inducing his employer to buy an automobile. If the money wasn't forthcoming, he declared, he would "queer the deal."

The dealer ordered the coachman out of his establishment and the next day informed his employer of the man's demand, adding that if the payment of a commission to the coachman was the customary thing he would add the \$75 to the price of the automobile and pay it. The gentleman was indignant at his coachman's conduct, but bought the machine.

In a few days he returned to say that he had experienced any amount of trouble with it and asked that the machine be overhauled.

"The trouble lies in the fact that your man didn't get his \$75," said the dealer.

The man took the hint and discharged the coachman. From that time on he had no more trouble with his machine.

Automobiles Saved Many Lives

Frequent mention has been made by the press of the excellent service rendered, at short notice, by automobiles during the unprecedented hot spell which covered the country three weeks ago. The following extract from a letter written by the general manager of the Pennsylvania Electric Vehicle Co. is, however, so interesting as to bear reproduction even at this late date: "On Tuesday, July 2," he says, "we were requested to place an automobile at the disposal of the Hahnemann hospital and accordingly sent around our station emergency wagon, equipped with 44 cells of 7 T. V., Chloride-Manchester battery; the speed of this wagon was about 12 miles per hour. The extreme heat continuing, on Wednesday morning we speeded the wagon by the addition of 10 cells, and were able to do the bulk of the calls from this hospital, but by afternoon the calls for medical attendance became so very frequent that we added 10 more cells, attaining a speed of 25 miles per hour, and incidentally far surpassing all records for ambulance runs in Philadelphia. During the hottest days we handled from 30 to 40 cases without a single delay of any kind and owing to the speed and ease of handling this automobile the hospital staff were able to save many patients whom it would have been impossible to reach in time by using the horse ambulance.

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"During the two hottest days the Hahnemann hospital handled 180 cases and lost only two by death; this was the best record of any hospital in Philadelphia. The automobile ambulance was kept in the hospital service until Monday, July 8. During the second and third days of the heated spell the ambulance horses suffered so severely that they were unable to do the work demanded of them and the police patrol wagons were called into service, but even they were unable to stand the strain and one patrol station notified the Hahnemann hospital that they would have to turn all calls over to the hospital direct."

The Electric Vehicle Co., by whom the vehicle was made, has just been notified by its English agent that the queen has bought a Columbia Victoria which she will present to the empress of Russia. The queen uses a carriage of the same make and pattern.

Flower Parade at Detroit

An automobile flower parade occurred in Detroit last week and was won by a vehicle entered by William E. Metzger, possibly the first man to engage in the industry there and certainly the most progressive at present. The machine was decorated with cut



flowers entirely, and it was the design of the owner to decorate it so completely as to defy competition. The panels were made of wire netting to which was attached a heavy covering of moss. Yellow flowers formed the bed and this was, in turn, covered with roses. The body of the machine was in yellow and the whole made a striking effect.

The automobile clubs throughout the country are doing much and will do more to acquaint the traveling public with roads, their quality and the country through which they run. The Buffalo Automobile Club supplies its members with printed blanks which the member is expected to use on his tours and runs around Buffalo and the district and the blank gives space for information about not only roads but railroads, steamboats, hotels, repair stations, etc., and where storage can be obtained. A good idea and worthy of imitation.

Three of the Mobile steam omnibuses, personally conducted by Mr. Walker, recently took a number of newspaper men for a ride over Brooklyn bridge. It was explained by an assistant that the carriages were much better for carrying passengers on the bridge than the trolley cars. "Each one of the carriages," he said, "will hold 14 passengers, and in them 23,000 passengers could cross in an hour, with the Mobiles running at 30-foot intervals, with comparatively no strain on the bridge structure."

A New York cab horse, one evening last week, wondered what was pushing the cab he was supposed to be drawing along the street. At the end of a block the shafts came in contact with a wall and the "something" had to stop. It turned out to be a Locomobile that had got loose through a lady's dress catching on the lever as she dismounted. The front wheels of the automobile had to be taken to a repair shop, but the cab was entirely uninjured and the horse was soon snoozing at his old stand.

Several gentlemen at Chattanooga, Tenn., including a local banker, have organized a company for the purpose of running an automobile from Retro and Soddy to Chattanooga. One of the four who are interested in the matter will go east at once and see if a 20-seated vehicle can be had. When this is done, the money is ready to put up and will be placed and the company chartered.

In preparation for the automobile races at the Fort Erie track, Buffalo, Sept. 20, the first news of which was given in this paper, the turns are to be banked. Three thousand cubic feet of earth will be used in the work. There will be races for all styles of automobiles, both amateur and professional, and

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in the latter events it is expected that Fournier will be one of the competitors.

People interested in the Wilmington (Del.) Steamboat Co., which runs boats from Wilmington to Philadelphia, are forming an automobile company to run passenger vehicles from the center of the city to the docks on account of the poor street car service. They hope eventually to have about 30 busses. They have not decided on the vehicle to be used.

The Brooklyn Rapid Transit Co. has decided to use automobile repair wagons and has placed an order. They will be driven by steam. Two engines will be placed in each wagon, developing 24 horse-power. If the first vehicle, which is to be finished in a hurry, proves successful more are to be started at once.

Consul Warner, of Leipzig, notes that a recently patented insulating material is made by taking pulverized casein and mixing it with vegetable oils. The mixture, to which rubber, caoutchouc, resin or coloring matter may be added, is pressed into forms and dried, or vulcanized by the addition of sulphur.

A French automobile has been received at the Chicago home of John W. Gates. It came over accompanied by a French chaffeur, by name M. Nyllas, who says it is capable of a speed of about 50 miles an hour.

A mail collection test by automobile has been made at Syracuse with satisfactory results. A trip which, with a horse, usually occupies three hours was made in 1h. 22m.

Owing to the carelessness of the operator, a passenger automobile, running between Hoquiam and Aberdeen, Ore., was recently upset, seriously injuring four passengers. The bus, which was the first of its kind in the west, was also badly damaged.

The secretary of the French postal service has made successful experiments with automobiles in a collection of mail. He found a gain of enough time to convince

him of the economy and general desirability of the new vehicle.

S. D. Drake, one of the men who was interested in a project to run a line of vehicles for public use at Plainfield, N. J., announces his withdrawal from the concern, and says he will run a line of his own.

The corporation counsel of Chicago has rendered an opinion that automobile boilers are not exempt from inspection. The boiler inspector announces that all boilers will be inspected, and that for the service there will be a charge, to the owner, of \$5.

Motor Age will be pleased to place any of its readers who want to buy anything in the automobile or cycle line in communication with reliable people who have the goods for sale.

The Oberursel factory, near Frankfort, Germany, recently exhibited an automobile plow. It has a 20-horsepower engine, operated by alcohol and uses a pint an hour per horse power.

One of the exhibitors at the Pan-American states that few sales are being made and that the makers are disgusted at having gone to vast expense and trouble for nothing.

M. Crumine, a bicycle dealer at Greenville, O., has purchased a vehicle which will carry eight people and will use it to carry passengers to and from the fair shortly to be held in that city.

The authorities estimate that 100 vehicles will take part in the New York to Buffalo endurance test.

Secretary Van Houten, of the St. Joseph (Mo.) state fair, has been instructed to contract for an automobile race each day.

An automobile club has been formed at Scranton, Pa. C. S. Weston is president and J. H. Brooks secretary.

An automobile system between San Jose, Cal., and near-by points, is to be established about a month hence.

Elizabeth Clark Decker and husband are touring from New York to Beaumont, Tex.





FROM CORRESPONDENTS



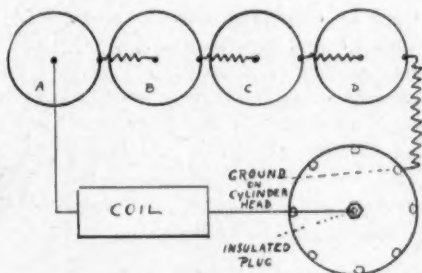
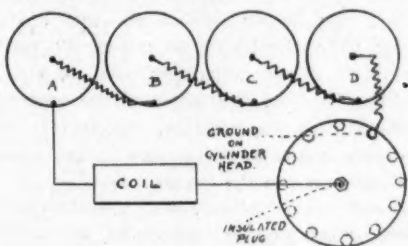
Columbus, O., Aug. 8.—To the Editor:—I have been hoping that you will continue the publication of the experiences of operators of automobiles for I, for one, get a lot of benefit from them and am made aware of are kept from similar experiences through the troubles of others. Sometimes the machines are not to blame, but at others it would be well for the manufacturers to make note of the complaints. I have had experience with a number of makes, but principally with Wintons, and I do not know of many instances in which the machine was at fault.

One day a friend of mine had a screw work loose in the exhaust valve and it gave him a lot of trouble to find it and get it in shape again. Another had two sets of batteries in a Winton. He had been using one set only, reserving the other for emergencies. You may imagine his surprise when, the first having given out, he tried the others and found them worn out also. Of course he condemned the batteries and kicked considerably, but it came out, eventually, that his son had taken a trip sometime between the old gentleman's trips, turned off the gasoline and then, going round to the front of the carriage, had turned the wrong switch. The contacts were left touching in both batteries and of course both ran down in the night.

In the early type of Elmore the water tank forms part of the body of the machine and the battery is fastened to this on the inside, all being of metal. In the case I have in mind either rain fell in on the batteries or the tank leaked and soaked them completely. In changing the batteries the owner put them in wrongly by connecting the center binding post to the ground on the engine and of course, as soon as the batteries got wet, they ran down by having an independent circuit. See diagrams. If the points A, B, C and D touch the metal frame

to which the engine is connected, short circuiting will occur. The second figure shows how it should be done.

Just one more case. A gentleman had a Winton which had never before given him trouble. Attempting to start on a trip he found himself unable to get out of the barn. He got out of the carriage, dumped all of his wrenches, screw drivers, etc., and proceeded to locate the cause of the trouble. He did—but not with the tools. The trouble was



with the gasoline. There was water in it and after cleaning out all the old stuff and ordering a new lot he was able, after carefully replacing all the parts, to proceed as usual.—Yours, etc., C. E. F.

(Many stories, some of them apparently overdrawn, have been told about foolish experiences with gasoline. They are generally true. Some time ago a gentleman of our acquaintance, who had installed a machine—not an automobile—at Peoria, was called

FROM CORRESPONDENTS.

up by long-distance telephone and told that the machine wouldn't work. He took the train and reached Peoria next morning. Sure enough, the machine wouldn't work. And still every part seemed perfect. In desperation he asked to see the barrels in which the oil had been received. The secret was then out. They had used common kerosene. And this, too, in a factory run by intelligent mechanics, at least one of whom is now engaged in the manufacture of automobiles.—Ed.)

Dirt in a Strange Form

Stanton, Del., Aug. 6.—To the Editor:—As a user of a vehicle on rough roads my principal trouble has been that the motor does not give sufficient power. First I used a motor of 4 horsepower. Next I tried 6 and still I hadn't enough. Now I am going to try a 12 horsepower motor as I am not running on paved streets or parks.

I am under the impression that a larger wheel, say 34 or 36 inches, would run easier than the 28 or 30 commonly used. Another of my difficulties has been the shaking loose of the wires of the battery. When I turn the handle I frequently find the wire broken or the screws shaken loose, due, of course to the rough roads.

I had one experience worth relating. I found great trouble in making my motor run right. My feed worked well and the motor ran until I got into the vehicle and started. Then it would stop and after many trials I concluded that I was beaten. Finally I took my gasoline feed pipes apart and found that a small ball of dirt had collected. It would roll back when the motor stopped, and choke the pipe after it had started. When it had been removed there was no more trouble so far as the running of the motor was concerned.—Yours, etc., R. R. Banks.

Stalled in Mid-Stream

Atlanta, Ga., Aug. 8.—To the Editor:—I send you a short description of a little experience I had. In riding from Atlanta to Rome, Ga., a distance of 84 miles through the mountains in a Loco, we found quite a variety of difficulties to overcome. Starting out on a beautiful morning we made good headway until we had covered about 40 miles when clouds came up quickly, followed by heavy showers. We were then

in a hilly section and had our first experience in climbing steep, muddy and slippery hills, often being obliged to run the machine up backward.

When we had traveled about 60 miles we came to a river which we attempted to ford. When we were half way across the steam suddenly deserted us. The gasoline had given out. There we remained, for a long time, wondering how we were to get out of our predicament until a "Georgia cracker" came along. After assuring him that his life was not in danger we finally prevailed upon him to go to the next village and bring us some gasoline. He returned in one hour with a can and a rope attached which enabled us, after much trouble in getting the end of the rope, to pull the can to the vehicle. In five minutes we had steam up and climbed the bank of the stream, as the farmer said, "like a scared cat running up a tree."—Yours, etc., H. M. Ashe.

The Makers' Association

Cleveland, Aug. 10.—To the Editor:—My concern has received a communication from the secretary of the National Association of Automobile Manufacturers, who ask for assistance in increasing the membership. He thinks every member ought to be willing to introduce at least one more and so make the influence and power of the association felt. But what is the association doing? It was formed nearly a year ago and a committee was appointed to look after its affairs. Since that time we have received one or two circular letters giving us advice of one kind and another, which advice represented the views of a few eastern men. Some attempt has been made to regulate shows and tests, but the trade at large, so far as I can ascertain, know nothing about these things and therefore cannot be expected to join.

I was a member, or rather the concern I represent was a member, of the old cycle board of trade. That body went to pieces after a brief and not particularly glorious existence, largely because too little attention was paid to the membership at large. Is the same thing to happen in the automobile trade? I represent an associate member. We cannot become an active member because we do not make a complete automobile. Therefore we have no vote in the management of the association or the elec-

FROM CORRESPONDENTS.

tion of its officers. We are taxed, but we have no representation in the governing body. The committee is composed of automobile makers. Where do the "allied interests" come in?

I should be willing to ask one or two of my friends in the trade, who at present know and care nothing about the association, to come into the fold, but should I tell them that the payment of dues was the only privilege accorded them, what chance should I have of inducing them to join? I submit, for the consideration of the association, that there should be a change in that part of the constitution at least.—Yours, etc., An Associate Member.

Motor Bicycle Experiences

Chicago, Ill., Aug. 12.—To the Editor.—In your last issue I read a communication from a Mr. Stewart, a daily user of a motorcycle of prominent make. His experience varies with mine and, as he expresses willingness to supply information, I would like to ask Mr. Stewart a few questions, believing that the information thus derived will be of assistance to others as well as myself. I have been a user of a number of vehicles, including a motor tricycle. I have derived great satisfaction from all, yet have never started on a run with a feeling of absolute security; and rarely have I gone any great distance without something needing attention.

Covering the use of motor-cycles only, I remember a time when a machine had been taken out after standing for a long time, with gasoline that had had a long time to deteriorate and a battery long in use. It started with a few turns of the cranks and ran splendidly for a long time. After a rest of, say, 15 minutes, it was impossible to get an explosion, regardless of the fact that every degree of regulation of the mixture known to the operator was tried. After another wait the machine started on the first turn and ran splendidly. Can your correspondent, or any other reader, explain why?

I have pedaled many a mile because the motor could not furnish power to drive me over good roads. It ran fast all the time, but yet had no power. The same day the same motor pulled my brother and myself as fast as we cared to go, the danger of accident being great on account of the speed at which we were traveling.

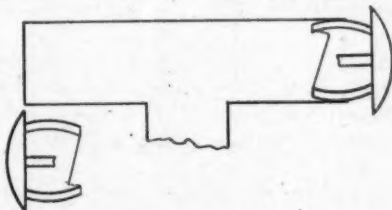
I have traveled faster with old and stale gasoline than I have with fresh and high degree oil; at least the latter was sold to me by the Standard Oil Co. as 76 degree, yet the machine was in as good condition at one time as the other.

I have had battery power drop suddenly and plugs break down when I was far from the base of supplies, and I know that I am not the only one, yet we are all satisfied with our machines. We all think there are none better.

Of course I have had the full list of experiences due to absentmindedness, dirt getting into the pipes and stopping the gasoline or cylinder oil, carbureter and valves becoming clogged, etc., and all of these in such manner that nothing from the outside would give a hint of what was wrong. Still, I am an enthusiast. I get satisfaction and enjoyment from studying the problems as they arise, but I believe there are others who do not enjoy that particular work and some of them get badly discouraged because they cannot run their machines without trouble. I believe Mr. Stewart's experience is something out of the ordinary, and should be glad to know how he manages it. Will he kindly explain some of the phenomena above mentioned?—Yours, etc., D. J. Patrick.

A Blowing-Back Cure

Bridgeport, Conn., Aug. 2.—To the Editor:—I have been running a steam carriage for some months and have gradually overcome most of the disagreeable features connected with it by adding such things as a steam pump to pump air and water. This has proved a great comfort, making me in-



dependent of livery stables, an extra gasoline tank, etc.

My only trouble of late has been with the burning back of my fire, which I have at last conquered and at the same time stopped the occasional blowing out of the fire by a strong wind. Last week, while I was touring on the south shore of Long Island, near

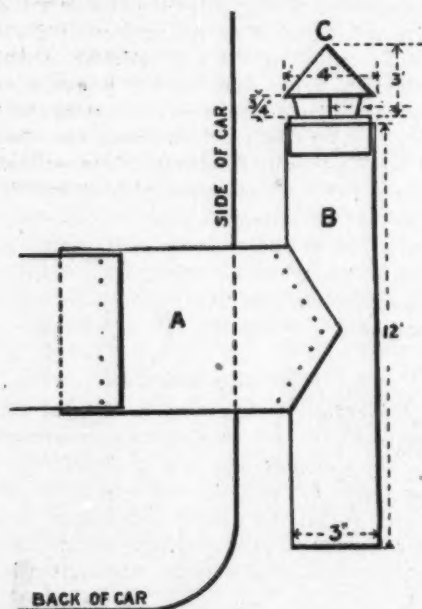
FROM CORRESPONDENTS

Westhampton, the wind was blowing very hard and every mile or two I was obliged to stop to put out my fire which continually blew back and kept everything almost white hot. I plucked some branches from the bushes by the road side, pushed them in the windward side of the draft chimney and continued my ride from Westhampton to Patchogue and from there to Port Jefferson without a recurrence of the trouble.

This gave me an idea, and as soon as I arrived at Bridgeport I had made a couple of stoppers, of Russia iron, such as are used to stop stove pipe holes in chimneys, and had attached four spring steel prongs. On the end of the prongs is a circle of Russia

flame blowing out in his face from getting too much gasoline in the burner. For the past month I have been using a gas lighting electric torch to light my fire instead of matches and it has been a great comfort to me. When my torch is heated and in place I simply push the end of the electric lighter into the fire box, squeeze the spring, turn on the gasoline valve and "there you are." It is impossible to get enough gasoline vapor through your burner to blow out in your face.

Perhaps these things are not worth mentioning, but they have proved very comforting to me and I have not seen them in use by others.—Yours, etc., Sydney Bishop.



iron with a mica flap hung by a loose hinge so that a puff of wind, blowing in the draft chimney, will close it. I enclose a rough drawing of the same which I think shows the idea.

By pushing the caps close into the smoke chimney steam can be held up for a much longer time by retaining more heat in the fire box when the fire is out. In practice I find that the position of the cap can be reversed with good effect, making the mica valve upside down.

I suppose every user of a steam vehicle has been bothered, more or less, in lighting his fire with and without a torch, by the

An English correspondent contributes the following description of a device which he has used successfully:

It consists of a roll of thin sheet iron A, which fits the present chimney. Attached to A, at right angles, is another sheet iron tube, 3 in. in diameter, B, whose axis is parallel to that of the car, the side of B being about 1 in. from it. A cap C, in the form of a cowl, slips into the end of B. The wind striking the cowl is deflected from the entrance to C, causing a partial vacuum at that point, thus assisting the draft of the fire, instead of hindering it. If a strong following wind is blowing, C is placed in the opposite end of B. For a side wind, it does not matter in which end of B C is placed. As a rule, however, C can be left nearly all the time in the position shown in the sketch. The supports of the cap C may be of spring steel, as described in the device mentioned by Mr. Bishop.

Cement Receipt Wanted

New York, Aug. 6.—To the Editor:—Will you kindly answer this question and oblige a subscriber to your paper. Can you give me a reliable recipe for a cement for spark plugs, one which will hold the center wire in the porcelain and will not blow or crack. I have tried everything I can think of, but have not yet got a satisfactory article.—F. B. Widmayer.

[The De Dion company makes a cement which answers the purpose admirably. It is the only one of which we have knowledge. Possibly the company might be induced to part with its receipt.—Ed.]

A SIMPLE AND EFFICIENT FRICTION CLUTCH

The primary object of a friction clutch is to form a flexible connection between a source of power and mechanism to be operated thereby, so that connection or disconnection may occur without shock; or to throw into gear one or more machines of a series, driven from by a common source of power, without interfering with the operation of the remainder and to do so gradually without injury to the driver or the driven. It is intended here to describe and illustrate a type of friction clutch, but before proceeding the writer takes the liberty of calling attention to a common error. A great many people are under the impression that a friction clutch may be used as a variable speed device and there are a number whose makers state that a motor vehicle equipped with them would have a range of speed between two and

twenty miles per hour, or in that proportion. These so-called speed regulating devices are of the sun and planet form with external brake bands, multiple plate friction of the Weston type or some other form of friction clutch in common use, adapted to the ideas of the builders. But under no circumstances can they be properly classed as speed-changing mechanisms, for while it is possible to use them for that purpose it must be done at great disadvantage. The power transmitted to the vehicle can only be in proportion to the maximum speed of the propelling mechanism when driving the vehicle at top speed. For instance, if the vehicle with the friction device locked so as to form an integral part of the driving shaft runs at, say, 12 miles per hour, the power going to the driving shaft will be only half of its maximum value when the

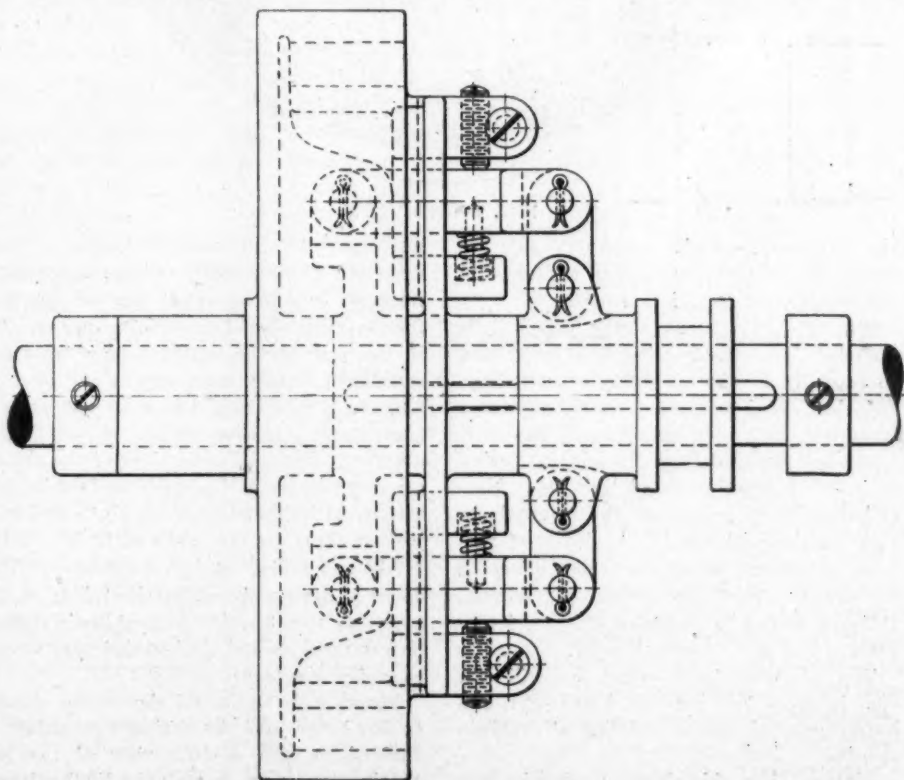


FIG. 1—SIDE ELEVATION.

SIMPLE FRICTION CLUTCH.

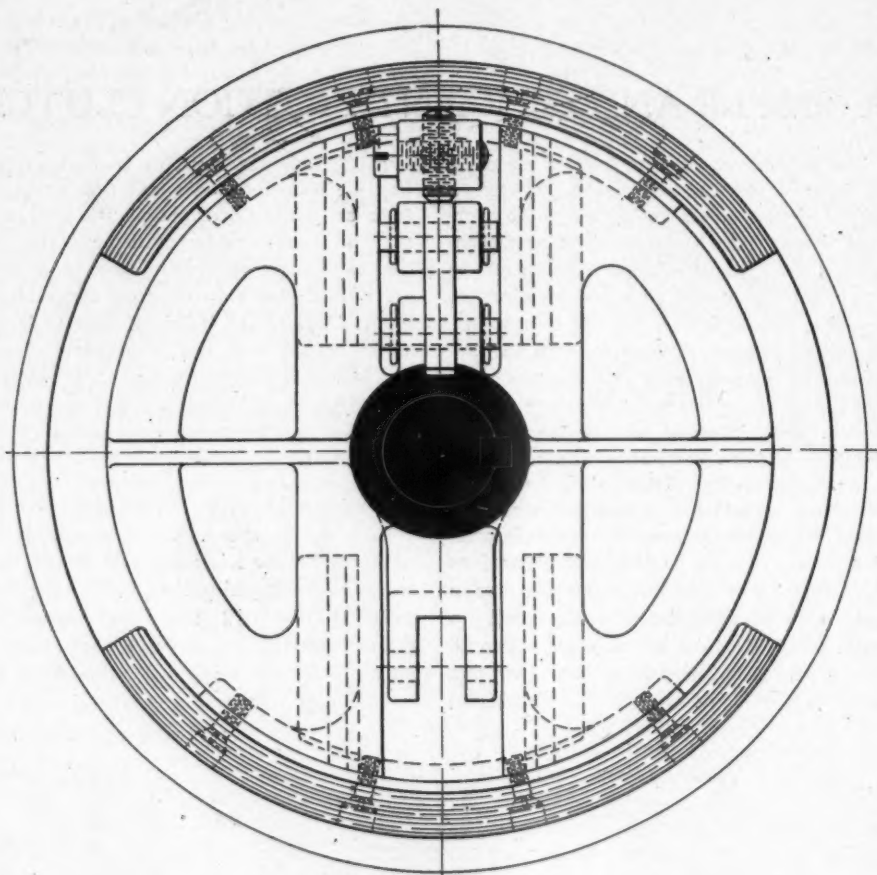


FIG. 2—END VIEW.

rig is running at six miles per hour, the remainder of the power being expended in the slippage of the friction device.

The type of friction clutch which it is intended here to describe has been used successfully in the operation of both high and slow speed machinery, using anywhere from five to 75 horsepower. It has been somewhat modified from its original design to insure compactness and lightness. Nevertheless every feature of the original design has been retained. A clutch of this type, at present in use, is transmitting 70 horsepower at 500 revolutions per minute. It is 24 inches in diameter at the friction surface and has six clutch arms.

The following table, which we will call No. 1, gives the general dimensions and horsepower of these clutches at various speeds.

Figure 1 is a side elevation, showing the clutch assembled and locked, as when trans-

mitting power. The clutch pulley is loose upon the driving shaft, and has a shoulder upon its hub to carry a gear or sprocket for the purpose of transmitting power. Or if the rim of the clutch pulley be made sufficiently strong, teeth may be cut upon it, and the clutch shaft driven by the pulley, the reverse condition to that shown in the drawing. Four different sizes of the clutch are given in the tables and drawings in this article, with diameters of $7\frac{1}{2}$, $8\frac{1}{2}$, $9\frac{1}{2}$ and $10\frac{1}{2}$ inches; these are for shafts of 13-16, 13-16, 17-16 and 11-16 inches, respectively. The clutches are numbered in the tables of dimensions 1, 2, 3 and 4, so that their respective dimensions and that of their parts may be easily ascertained.

Figure 2 shows an end view of the clutch. In the lower half the lifting mechanism is omitted to give a clear view of the lug which carries one end of the lifting lever.

The principle of operation is so clearly

SIMPLE FRICTION CLUTCH.

shown in Fig. 1 that only a brief description will be necessary. The sliding sleeve, when moved to the right, lowers the clutch shoes through the medium of the lifting levers and the small springs underneath the same, which springs are carried in pockets at the lower end of the clutch shoe guide arms. The set screws, shown in the lugs at the extreme outside of the clutch spider, are for the purpose of adjusting the shoes, so that equal pressure may be brought to bear on both; also to take up wear of same.

In this construction the throw of the sliding sleeve is always constant, a point greatly to be desired, especially in automobile work, where the clutches are generally operated from some form of controlling device which should have positive movement.

Movement to the left, of the sliding sleeve, raises the lifting levers by means of the short links, and securely locks the entire clutch mechanism together. These points of positive throw and independent adjustment of the clutch shoes, in connection with the absolute lock, render this form of clutch very desirable.

Figure 3 shows the steel collars which are required to go upon either end of the clutch shaft. When used in the manner shown and described in Fig. 1 a headless set screw goes in these collars. The tap holes

in one of them should not be tapped out until after the clutch has been assembled. This collar clutch be used at the left hand of the.

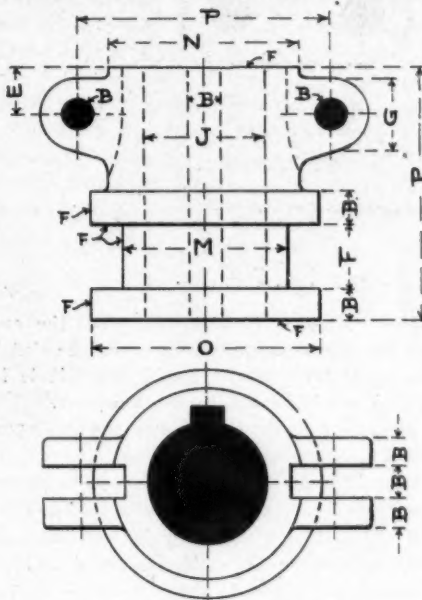


FIG. 4—SLIDING SLEEVE.
One, cast iron.

clutch pulley, as shown in Fig. 1, and the tapping drill should be run through the collar into the shaft about 1-16 inch, so as to firmly hold the collar in position on the

TABLE NO. 1.
General Dimensions and Horse Power.

Clutch Number.	Diameter of Shaft.	Diameter of Clutch.	Width of Face.	HORSE POWER.					
				REVOLUTIONS PER MINUTE.					
				100	200	300	400	500	600
1	1½	7¼	1½	2	2.82	3.46	4	4.48	4.90
2	1¾	8¼	1¾	3	4.23	5.10	6	6.72	7.35
3	1⅞	9¼	1⅞	4	5.64	6.92	8	8.96	9.80
4	1½	10¼	1¾	5	7.05	8.65	10	11.20	12.25

TABLE NO. 2.
Dimensions—Figs. 3 to 9, Inclusive.

Clutch No.	Diameter of Clutch	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	7¼	¾	¾	⅞	¾	⅞	¾	⅞	¾	1	1⅛	1	1¼	1⅝	1⅞	1⅞	2⅞	2⅞
2	8¼	⅞	⅞	¾	⅞	¾	¾	¾	1	1⅞	1⅞	1¼	1⅞	1⅞	1⅞	2¼	2⅞	2⅞
3	9½	¾	¾	⅞	¾	⅞	¾	⅞	1⅞	1¼	1⅞	1⅞	1⅞	1⅞	2⅞	2⅞	2⅞	3⅞
4	10¼	⅞	⅞	¾	⅞	¾	¾	1	1⅞	1⅞	1⅞	1⅞	2	2¼	2⅞	3¼	3⅞	3⅞

SIMPLE FRICTION CLUTCH.

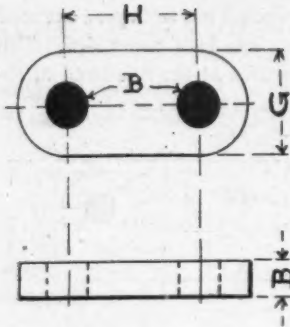


FIG. 5—LINK.
Two, steel.

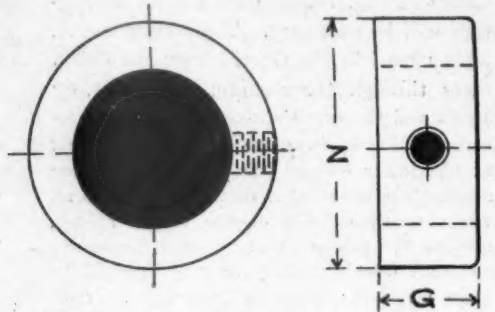


FIG. 3—COLLAR.
Two, Steel.

shaft. This is necessary to take the end thrust of the lifting levers, when the clutch is being thrown into gear. After it is in gear there is no end thrust whatever.

Figure 4 is the sliding sleeve which operates the lifting levers through the short links or toggles. It is made of cast iron and requires a pattern. The groove for the yoke in the sliding sleeve may be cored out in the pattern, or left solid and turned out, as desired. The slots in the ears of the sliding sleeve may be cored out, or, if a very nice job is required, the ears may be left solid in the pattern and milled out, but it is not absolutely necessary to machine these slots.

Figure 5 shows the short links or toggles which go in the slots in the ears of the sliding sleeve, and are attached also in the jaw ends of the lifting levers. They are of bar steel and should be hardened slightly. The lifting links are shown in Fig. 6. These can be made of cast iron of good quality, or malleable iron, if obtainable, without much trouble. The pins which connect the short

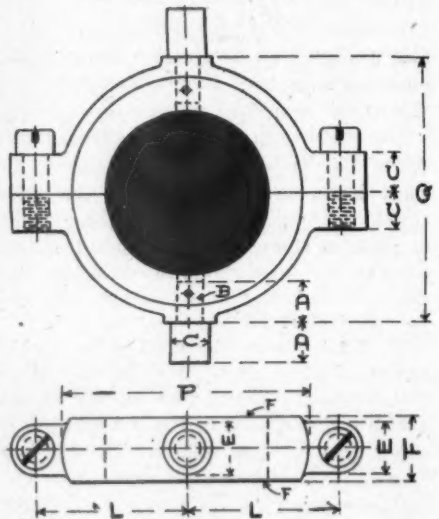


FIG. 8—YOKE.
One, bronze.

links or toggles, between the sliding sleeve and the lifting levers, are shown in Fig. 7. They should be made of cold drawn or

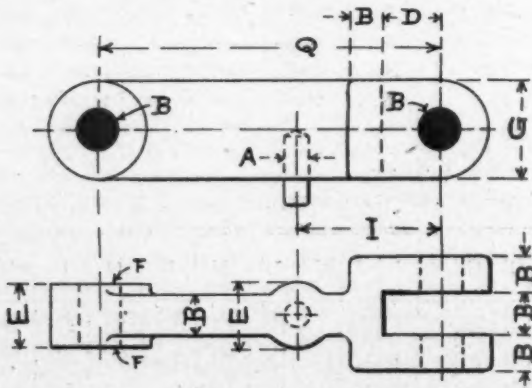


FIG. 6—LIFTING LINK.
Two, cast iron.

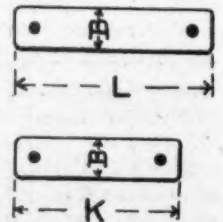


FIG. 7—PINS.
Two each, steel.

SIMPLE FRICTION CLUTCH.

rolled steel and holes drilled in, as shown, for the reception of split pins or cotters near each end, as shown.

Figure 8 shows the yoke which goes into the groove in the sliding sleeve, shown in Fig. 4. Only a half pattern is needed, as both halves are alike. They should be made of bronze, and steel pins are required, as shown, to enable the sliding sleeve to be operated by means of the yoke lever. These pins should be a good, snug, driving fit in the holes, and afterward fastened in with

small pins, which should also be a driving fit.

The yoke lever is shown in Fig. 9. This should be made of bar steel and nicely forged to the shape shown. It is made in two parts, so that it may be readily attached to or detached from the yoke

Table No. 2 gives all the dimensions necessary for the construction of the details so far given from Figs. 3 to 9 inclusive. The subject of the next article will be the clutch spider and pulley, sliding shoe arms, etc.

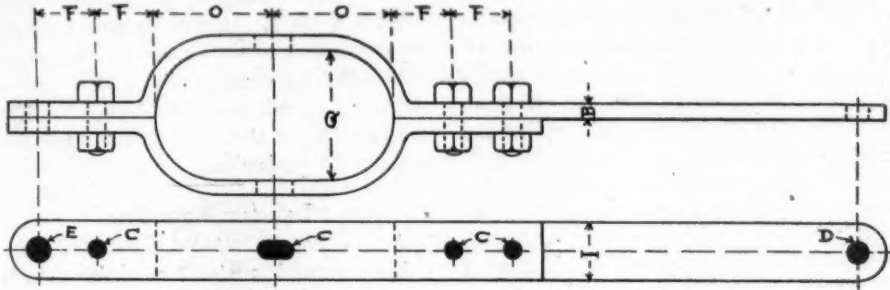


FIG. 9—YOKE LEVER.

TIRE PROBLEMS DISCUSSED BY MAKERS

In a recent issue the Carriage Monthly devoted a great deal of space to consideration of tire problems, concerning which it had asked the opinions of many manufacturers. Among the questions asked were some which are of no particular interest to the automobile trade but the following, re-numbered for the purposes of this article, will be found of interest:

1. What do you consider the greatest difficulty met with in the rubber tire industry today?

This, with the one which follows it, is probably the most important question of all. The replies show rather a variety of difficulties, than any one which is paramount. We will consider them one by one. In point of numbers, there is a strong disposition to consider quality the chief stumbling block. About a dozen manufacturers lay stress on the fact that "others" do not put good rubber into their tires, and consequently the tires wear out rapidly, causing general dissatisfaction. Another difficulty is the use of tires too small for the load. On automobiles there is one complaint on account of low wheels, no reason being given,

however. Still another difficulty is the maintenance of price in the face of persistent cutting on cheap goods. One firm makes the statement, as terse as it is facetious, that the chief trouble is "competition" and suggests as the best method for overcoming it, "coaxing the other fellow to quit."

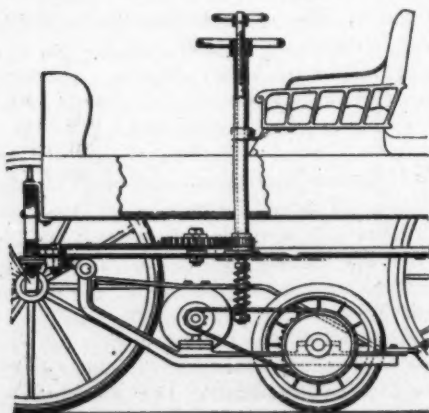
2. What method would you suggest for overcoming the above?

In the case of the competition difficulty there is a dearth of suggestions. No one seems to be prepared to state how prices are to be maintained, poor grades of tires withdrawn from the market, and unfair competition shut off. Evidently this must be an individual movement. To our minds the Hartford Rubber Works comes very near hitting the nail on the head when it says in substance, "Educate the people persistently, until they demand a good tire, at any price." The Consolidated Rubber Tire Co. says, anent overloading, "Insist upon selling a tire that is large enough." The New York Belting and Packing Co., with many others, sounds the same note—"Tell the public facts. Price is not the important thing. How many miles will the tire run is important. Mileage first."

IN THE WORLD OF INVENTION

Patent 680,074, dated August 6, to Leon W. Pullen, Camden, N. J., relates to a driving device for a motor vehicle and recourse is had to a novel means of applying the motive power. Instead of applying it to the wheels the inventor employs one or more auxiliary traction wheels and applies the motive power direct to them. These auxiliary wheels are carried by a frame arranged beneath the running gear and connected therewith with provision for transverse and vertical movement which enables the wheels to readily accommodate themselves to irregularities of the road, and permits their adjustment to regulate the pressure or frictional contact with the roads.

In the preferred construction, a side elevation of which is shown in the illustration, this frame is hinged at its forward end, near the front axle, and its weight, with that of the motor when the motor is carried by it, is stated to be sufficient to produce the frictional contact requisite for driving purposes. The invention embraces means for the adjustment of this hinged and movable frame with facility while the vehicle

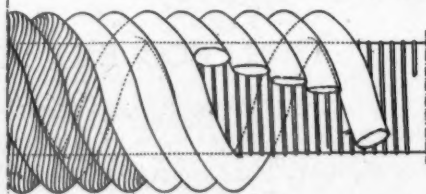


is in motion and thus regulates, or entirely obliterates, the frictional contact with the road. The horizontal or transverse motion

of the attachment enables it to adapt itself to the requirements of moving the vehicle around a curve. It will be seen from the drawings that there is a screw arrangement provided for governing the vertical motion, whereby the friction wheels may be lifted entirely free of the road when it is desired to stop the vehicle.

Invents a Rope Tire

Aurelio Bonfiglietti—an Italian, of course—has invented a tire for motor vehicles which he claims is elastic, resilient, econom-



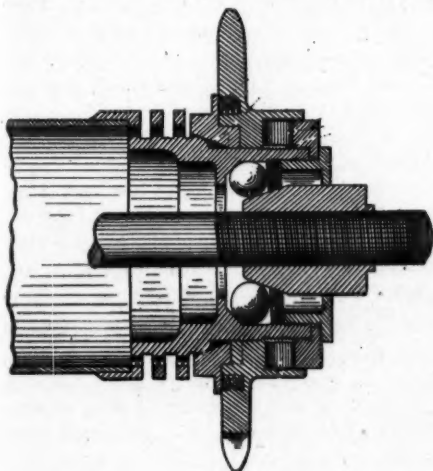
ical and has a greater coefficient of adherence to the ground than tires now used. A core is made of hemp, wool, hair or any other suitable substance which is dried and then immersed in a solution of oil or tar to preserve it. This is bound by a wire. A cord, serving as a cover, is made of rope-yarn, which has been immersed in linseed oil holding in suspension a certain quantity of white and red lead. This is said to adhere to the core so tightly that it cannot be separated. The construction of the tire is shown in the accompanying illustration.

New Morrow Patent

Patent 679,982, dated August 6, to Alexander P. Morrow, Elmira, N. Y., who assigns one-half to H. H. Fulton, covers a friction clutch, or, as it is more generally known, a free wheel device. The patent claims are particularly directed to its use in connection with a bicycle, but a modification is shown, designed to be applied to a solid shaft, for any purpose desired. The illus-

WORLD OF INVENTIONS.

tration shows a central, vertical, longitudinal section of the sprocket end of the hub of a wheel fitted with the friction clutch. In general construction this hub may be of any approved style and make provided with the usual axles and conical bearing sleeve on which the bearing balls run. On the neck of the hub is formed an annular boss against which, or on which, the inclined interior surface of the clutch ring engages, runs and locks, as will be afterwards described. This clutch ring consists of a suitable metal ring, having an annular flange to set or bear against the face of the sprocket wheel, as indicated in the drawing, and having a longitudinal extending flange having a series of inclines or ratchet teeth on the end next the sprocket wheel. The interior face of the bore of the clutch ring



is inclined. This inclined surface, as above stated, operates on the boss attached to the neck of the hub. This clutch ring has a slight movement lengthwise to engage and release it from its seat upon the boss. The sprocket wheel is mounted loosely upon its bearing on the hub in such manner as to permit the hub to rotate when the sprocket wheel is held stationary as by the chain when stopped in its travel. The hub of the sprocket wheel is formed with a series of inclines, or ratchets, coincident to and engaging with those in the clutch ring. These interengaging ratchets or cam surfaces do not pass each other, but when engaged have a slight sliding movement on each other sufficient to slide the clutch ring onto its seat on the boss and effect the frictional contact therewith which locks the

parts together. This sprocket wheel is further provided with a horizontally extending annular flange which lies over and around the perimeter of a ring screwed on the end of the hub and formed with a plurality of seats in which are suitably disposed anti-friction rollers standing radially to the axis of the wheel and so arranged that they bear against the face of the sprocket wheel. The various members are held together and in proper relation to each other by a cap screw, the stem of which engages with interior threads in the bore of the hub and the end of which closely encircles the body of the conical bearing sleeve to close the end of the hub against the admission of dust, etc. On the inner face of the sprocket wheel at points contiguous to the clutch ring should be formed a number of sockets in which are held spiral springs bearing with their outer ends against the face of the clutch ring and tending, by their action, to continually restore and hold the sprocket wheel to rotary alignment.

Mentioned Briefly

No. 679,765, to George W. Manson, New York, covers a bicycle support designed to be attached to the ends of the axles of the rear wheel and, when not in use, to be turned up and form a mud guard or skirt protector. No. 34,903, to J. L. Knoll, is a design patent on a frame for a ladies' cycle which is not likely to be generally adopted at present. Another design patent is that issued to V. H. Bendix, of New York. It covers a frame for a motor bicycle. The motor is to be mounted behind and below the bracket, a loop being provided for the purpose. The frame would be lengthened to an abnormal extent by the use of this idea.

John E. Sweet, of Syracuse, has been granted patent No. 679,794 on a cycle support designed to be fastened to the wall and on which the machine is to hang. A clip for a cycle saddle is covered by number 679,913, granted to Charles R. Reid, Springfield, O., assignor to the Kirkpatrick Saddle Co.

No. 680,048, to Emil Koch, of Germany, covers a spring frame for a bicycle which bears some resemblance to the English Whippet. The last of the week, number 680,177, is granted to H. Rosskopf, also of Germany, and covers a cycle stand of doubtful utility.



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Asbury Park, Aug. 8.—Brady gave his Jersey coast neighbors the treat of a national circuit meet to-day and over 3,000 summer girls and boys saw a star series of struggles. Taylor was absent by reason of a fall at Boston the night before. There was no absence of sensation, however. Iver Lawson, the new star fresh from his Australian triumphs, put Kramer out of business for the final and in that scored his second championship win, Leslie Wilson being his victim. In a square side by side battle in the last lap of the grand semi-final Lawson defeated Kramer, simply outriding him by three lengths. In the first of the grand semi-final heats Wilson caught McFarland napping and got a lead of 15 yards. He was a sure winner, when he was suddenly wrecked by a puncture, leaving McFarland to win. With commendable sportsmanship the Californian refused to take the heat, and the referee, carried away by pardonable sentiment, allowed it to be run over. Wilson won; but McFarland's popularity ran high. Elkes beat Urquart, one of his pacemakers, in a 5-mile race in 8:51 3-5, and Michael rode a 2-mile exhibition in 3:31.

The mile professional handicap fell to Bardgett (100) in 2:05, with Wilson (40) second, Stevens (80) third, and Hausman (80) fourth. La Due won the one-third mile amateur open, with Billington second and Gus Welsing third. The amateurs put up a rattling good race in the 2-mile handicap and rode it in fast time for such a shifty gravel track. Menus Bedell (90) won in 4:37 2-5, with Harry Welsing (scratch) second and La Due (scratch) third.

Great Racing at the Garden

New York, Aug. 9.—Some 5,000 people, the biggest crowd yet gathered, were at Madison Square Garden tonight at the na-

tional circuit meet. They saw the best set of races ever run off in the Garden. Kramer was in unbeatable form. In his trial, largely owing to the terrific pace set by Hausman at the start, he won in 58 seconds, world's competition record for the half in a scratch race. The grand semi-finals narrowed down to Cooper and Newhouse in the first and Kramer and Fenn in the second. They finished in this order. Cooper took the lead in the final, but Kramer tore by him on the finish lap and won as he pleased, Cooper sitting up in the stretch.

Fenn did a magnificent bit of riding in the mile handicap, winning his heat from scratch in 1:57 4-5, thus tying the record. In the final, as he was making his last sprint, two men fell ahead of him and injured his chances. He, however, was timed officially in 1:57 2-5, cutting his trial heat figures two-fifths of a second. The race went to Lester Wilson (35) in 1:55 1-5, with Hausman (60) second, Fisher (20) third, and Bardgett (80) fourth.

Earl Stevens won the 2:10 mile, but put himself in the championship class with 2:04 4-5. Downing was second and Leander third. It was at the previous race in the Garden that Bardgett won and also lost his 2:10 status.

Kramer Increases His Lead

New York, Aug. 10.—To-day's national circuit meet wound up six days of continuous championship racing. The circuit chasers left for next week's battles at Buffalo to-night.

The major's accident at Boston Wednesday night put him out of the race for the week. In his absence it was expected that the battle would narrow down to Kramer and Lawson this afternoon. Lawson and Collett emerged from the trials and first

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semi-finals into the grand semi-final. In the grand semi-finals pace was put in to the quarter. Lawson took the pace. At the quarter Lawson persisted in sticking to the pacemaker. In the middle of the back stretch Collett jumped and in a jiffy had a lead of 20 yards. The Chicagoan came very fast; but it was too late. He had been caught napping and was easily beaten.

In the final there was no pacemaker and the men did the slow riding act to the middle of the back stretch. Kramer was in the lead and seeing Collett crawling along instead of being under headway for the jump, suddenly leaped away and won as easily as Collett had from Lawson.

In the second grand semi-final Wilson put up a good race against Kramer; but in the final succumbed to the inevitable by a half a length. Fenn and Fisher were put out in the first semi-final by Collett and Lawson, and in the second Kramer and Wilson disposed of Cooper and Hausman.

Elkes easily won two straight heats in his motor paced race with McFarland, the first at a mile from a standing start in 1.41 2-5 and the second at three miles with a flying start in 4.40. It was a windy day. The track record is 4.33 3-5 and the world's record, 4.30 3-5.

There being no lap prizes in the 5-mile professional handicap the limit men refused to go out and the scratch men caught the bunch before two miles had been ridden. Cooper (50) won in 11.45, with Lawson (scratch) second, Bedell (200) third and Fenn (scratch) fourth. Old Jack Green won the 2.10 mile with Leander second and Downing third.

Turville Defeats Gus Lawson

Salt Lake, Aug. 8.—The races scheduled for Aug. 6 had to be postponed on account of rain and were pulled off last night. The big event was a 20 mile motor paced race between Charlie Turville, of Philadelphia, and Gussie Lawson, of Buffalo. A great deal of trouble was given by the motors before the race got started, but once under headway they gave no further trouble. Turville won the race by about 10 feet. The race was one of the best ever given in the middle distance and was between the two best pace followers on the western tracks.

Harry Gibson carried off the honors in

the mile handicap, winning by several lengths in 1:55 2-5 from the 70-yard mark. This is Gibson's first win since his arrival in the city, and as he is riding in his old time form great things are expected from him by his many admirers.

Eddie Smith, the local amateur champion, had little trouble winning the 3-mile open in 47 2-5. Johnnie Chapman, of Atlanta, and Clem Turville are booked for a 10-mile motor paced race next Tuesday evening. The races are attracting considerable attention among the eastern cracks and quite a number are expected to arrive here at the close of the National circuit.

Six Days on Motor Bicycles

Albert Schock, who has conducted a successful bicycle business, known at the Champion Cycle Co., at 68 and 70 Montague street, Brooklyn, for several years, once more has the racing fever and has asked the Age to superintend a test he desires to make. It will be remembered that Schock won the first night-and-day six-day-race on the ordinary and again, for a similar time, on the safety. Now he proposes to tackle it, night and day, for six days, with a motor bicycle and the event is to come off in September, if he can get suitable motors. Schock will ride on Long Island and a number of newspaper men will act as officials. Schock figures that he can do 3,000 miles.

The Amateur Championships

Cycle racing held the boards at the Pan-American during the whole of last week. The attendance throughout was excellent. The event of the opening day was the five-mile exhibition by the phenomenal youngster, Walter Smith, who covered the distance in 8:27 1-5, beating the former record of 9:00, held by Dubois. He also broke the two and three mile records of 3:26 2-5 and 5:53 1-5, respectively. Smith's time for the two miles was 3:20 4-5 and for three miles 5:52 1-5.

J. V. Ingraham, of Chelsea, Mass., established a new record in the semi-finals, both the quarter mile and the third of a mile national amateur championship; won the five-mile handicap from scratch, and with M. L. Hurley, of New York city, won the one mile amateur tandem championship in the most exciting finish of the day.

On Tuesday rain stopped the men in an

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hour race, when they had been going 21 minutes. Great interest was taken in the one-third mile championship. Four men were still in the semi-finals. Hurley defeated F. A. Moore in a loafing contest, their time being 1:06 2-5. Denny and Ingraham, of Chelsea, were the other pair. They started off at a brisk pace. As they were passing the 16th flag Ingraham cut in on Denny, forcing him off the track. Denny's wheel was smashed and his shins were badly barked. The judges ordered the race run over again. The men started off at a terrific pace, Denny winning in 46 seconds. Hurley defeated Denny in the quarter-mile final.

On Wednesday Hurley defeated Denny in the final.

Denny took the lead, but before one-half of the distance had been traversed Hurley shot to the front and maintained his lead over the tape, winning by a full length.

George Wiley, of Troy, rode rings around his opponents in the hour event, one-half of which had taken place on Tuesday.

Walter Smith gave another grand exhibition. Smith cut the record for two miles of 3:20 2-5 down to 3:10.

Hurley was again the star performer on Thursday, when he won both the half and mile championships. Hurley, Losee, Metting and Hoffmann were the starters in the mile championship. Beam, of Buffalo, was put in to pull the riders out. Hurley started to sprint, and gained a length before the field got to moving. He retained the lead coming down the straight, and crossed the mark a length ahead of Losee, of Brooklyn, with the other two close up for third place.

Walter Smith continued his record-breaking trials, but a high wind blew across the track. He set out to break the track record of 1:36 3-5, made by himself on Wednesday. He made a new mark of 1:32 2-5.

The speedy New Yorker went down to defeat on Friday in the five-mile championship. The trick was performed by T. J. Grady, of Chicopee, Mass. Hurley remained in fourth place, with Grady close to his rear wheel. Entering the last turn Grady spurted and gained a lead which Hurley tried his best to cut down, but failed, the men finishing almost even across the tape.

The semi-finals of the two-mile national amateur championship were won by Grady, McConnell, Hurley and Hoffman.

On Saturday Hurley lost another championship to Grady, the two mile, the first race of the day. Grady was the first to sprint for the tape, and maintained daylight between himself and the New York crack.

Henshaw and Headstrom broke the world motor tandem record of 40s. doing the distance in 39 1-5s., first quarter in 20s.

The race of the day was the 20-mile middle distance motor-paced championship. Walter Smith, K. C. W., Brooklyn, shot to the front and made the first mile in 1:39 4-5, breaking his record of 1:44 4-5. Smith led for three miles, and then it was seen that he was in distress, severe cramps being the trouble. Joe Fulton, of Springfield, Mass., took the lead and maintained it to the end, lapping all the others. F. A. Osgood, of Lynn, Mass., finished second.

During the week Hurley scored 26 points, Grady 12, Ingraham 7, Denny 6 and the others from 4 downward.

The Bottom Bracket Suit

A false alarm has recently been given out by the daily press to the effect that a decision in the bottom bracket case might be expected in a few weeks. The facts are that the testimony has not yet been completed, is not likely to be completed for several weeks and perhaps months, and that there is no likelihood of a decision inside of a year. There have been a number of interesting developments in connection with the case which certainly will not have the effect of hastening its conclusion.

Paced by Motor Bicycles

NEW YORK, Aug. 12.—The single motor bicycle was given a thorough and most satisfactory test at Madison Square Garden tonight, where for the first time it was used as a pacing machine in place of the tandem motors, now altogether employed for this purpose. The race went off without a single hitch or the necessity for a single change of motors during the 15 miles of the contest.

It looks as if the new style of pacing is destined to become popular. In the first place, the economy in the cost of a single machine and of maintaining a smaller pacing crew will prove a great factor, just as

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the motor tandem supplanted the man-driven multicycles. Then again, not only the following of a single machine, but the handling of it effectively, present new factors of skill in the pacemaker and rider that are bound to add to the interest of such contests, though, of course, tandems will always have the advantage when mere speed is to be considered. Still the singles went by no means slowly tonight, as the 15 miles were covered in 26:47½, as against a world's indoor record of 25:42 2-5. The rate attained was about 1:47 1-5 per the mile, and Nelson, the winner, was not pressed, winning by 8½ laps of a 10-lap track.

Standing of the Men

NEW YORK, Aug. 12.—Last week's series of victories, helped out by the absence of Taylor during the last three days of the circuit, increased Kramer's lead to 40 points, gained from seven firsts, three seconds and six thirds. Major Taylor has been first four times, second twice and third three times. This has yielded him 23 points. A quintette of good riders constitute the pursuing bunch at a considerable distance to the rear—Tom Cooper, with 14, Fenn with 13, Lawson and Fisher with 12 each and Wilson with ten.

Kramer is in far from a safe lead, as a week's reversal of his form will enable Taylor to pass him and such likely propositions as Lawson and Fenn to come within hailing distance. The circuit winds up early in September at Charles River, Boston, with two days of championship racing at the standard distances, for which double points are scored, so the fight is far from won yet by either Kramer or Taylor. Lawson is regarded as the most dangerous proposition outside of these two.

The other riders to score on the table are Gascoyne and McFarland, 5 each; Corlett and Freeman, 4 each; Owen Kimble, 3; and Hausman, Butler and Newhouse, 1 each.

The A. B. C. Meeting at Paris

The meeting organized by Mr. Titus-Postma, Paris manager of the American Bicycle Co., took place on July 28 and was witnessed by 5,000 people. Already it is whispered that a big French house will follow the scheme in a short time. The principal event was the open scratch race, in which riders mounting all kinds of makes were ac-

cepted. The four heats were won by Momo, Jue, Bourotte and Gentel. Among those shut out in the heats were Grogna and Protin. In the final Jue proved the surprise and won easily by one-half a length from Momo.

With a handicap of seventy meters Jue again passed the winning post first in the 1,500 meters handicap, winning from Nieuport (60), Brecy and Lesna. But this was not all. In the team pursuit race between Jue-Accouturier and Lesna-Fisher, Jue caught the rival team at 7½ kilometers, covered in 9:52.

The Miller-Simar twenty-five kilometer match proved an easy victory for the Frenchman. For the first 5 kilometers Charley went at good speed and kept Simar in the rear, but soon after the little Frenchman passed the Chicagoan and gained two laps. Four laps before the finish his tandem had an accident and lost half a lap, winning, however, by one and one-half laps in 24:3-5.

Then came the attempt to break the hour record by Bauge. Paced by Demester and his big tricycle, 10 kilometers were made in 9:12 3-5. Soon after it was seen the left wheel of the tricycle was not running even and before another lap was accomplished a sensational fall occurred. The tricycle stopped in the stretch while the left wheel, which had broken off, ran away. Demester went up in the air in a summersault and lay on the ground like one dead. Bauge ran into the tricycle and was thrown over it. There was a call for an ambulance, but Bauge jumped up after a minute or so and so did Demester. The latter immediately went to see his machine and exclaimed: "D—; it was the left wheel that made us ascend. Well, we try it again in a day or two."

Three Meetings in Milan

A large congregation of international riders took part in the races at Milan, Italy, July 27 and 28. On the first day the principal event was the Great Prize of Milan, which was won by Ferrari. The handicap was won by Restelli (25 meters) from Ferrari (15). On the second day, in the morning, two consolation races were won, the first by Tommaselli, the second by Lambrechts. In the afternoon 4,000 spectators saw the races. The scratch race was won by Eros, followed by Kaiser. Ferrari was third. Tommaselli won the 10 kilometers

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paced race from Eros. In the match race between Italy, France and Germany the Italians won with 8 points against 15 for the French and 19 for the Germans. Eros won the first heat and Ferrari the second.

Cleveland Factory Rushed

Work at the Westfield (Mass.) factory of the A. B. C. has started early. About 350 men are employed in the manufacturing department and between 30 and 40 in the Cleveland sale department. Every day more hands are being set at work and within a month it is probable the present number will be nearly doubled. The shutdown for the annual inventory was for only three days, instead of the customary two weeks. It is expected the coming season's output from the factory will be the largest of any year since the establishment of the business in Westfield.

Great Struggle at Vailsburg

NEWARK, N. J., Aug. 12.—Though a 20-mile motor paced race was the featured event at Vailsburg yesterday, an Australian pursuit race furnished the sensation. Bleecker, of Brooklyn, and Colgan, of Trenton, raced mile after mile with no appreciable gain to either. As ten miles were neared the referee sent a mounted messenger to suggest that they quit and divide the money. Bleecker consented, but before Colgan could be reached he toppled from the machine and was carried from the track. Bleecker had covered 10½ miles in 25:43, unpaced.

Arthur Ross led for 11 miles in the motor race and was then passed by Monroe, who drew gradually away and won by 2½ laps in 30:19.

Joe Nelson, the little brother of John, made a great trial for five miles behind pace and made good the reports that had been afloat of his prowess. He covered the five miles in 8:13 1-5, a new amateur paced record.

Handee to Build Motor Bicycles

Reference has been made, more than once, in this paper, to the motor cycle produced by the old time racing cyclist, Oscar Hedstrom. Arrangements are now under way to manufacture it at Springfield, Mass. The plan is to increase the capitalization of the Hendee Mfg. Co. from \$5,000 to \$35,000. Hendee will retain a controlling interest as payment for his present concern and the

patents, and will offer the remainder for sale. It is expected that the manufacture of the motor cycles will be carried on for a time on the floor above the present quarters of the company. Hedstrom may remain with the company. The first machine was completed in May. It was thoroughly and severely tested. It weighs 75 pounds and has a 5½-inch tread.

Ellegaard in Copenhagen

A two days' meeting was given in Copenhagen July 25 and 27 which attracted some 5,000 spectators each day. The 1,000 meters scratch race resulted in an easy win for the world's champion from Seidl and Jensen. In the 5,000 meters race the Dane won by 10 lengths from Seidl and Doerflinger. The latter won the handicap from Huber and Olim. On the second day the important event was the tandem match between Huber-Seidl and the Ellegaard brothers. The latter won in two straight heats. The scratch race was won by Ellegaard from Doerflinger and Schilling. In the 3,000 meters handicap there were 17 starters. Ellegaard from scratch passed all his competitors and finally finished sitting up. The public was so enthusiastic over its favorite's achievements that it jumped over the fence and carried the rider over the track in procession, singing the national hymn.

A. B. C. Sues Wisconsin Wheel Works

Suit was commenced on Monday by the American Bicycle Co. against the Wisconsin Wheel Works, to restrain it from infringing the Smith bottom bracket patent. This action means nothing more than that the plaintiff, in the event of the patent being sustained in the Snyder case, will be in position to hasten action against western makers.

Motor Bicycles for England

The American motor bicycle has already found its way into Great Britain and at least two English cycle makers are importing American motors. These facts have caused the Cyclist to sound one of its "notes of warning" to the trade. In its latest issue it says:

"It is never wise to prophesy unless you know, but in this particular matter we cannot regard the gift of clairvoyance as in any way necessary to the perception of the coming boom in motor bicycles. The

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spirit of, and the yearning for, self-propelled locomotion on common roads are in the air today, and slowly but surely are permeating and imbuing every class of the community. The desire for this form of travel will demand satisfaction in a very short time—too short, we greatly fear, if our own people are to secure the lion's share of the profits which in any condition of sound business must follow. Now automobilism in the form of self-propelled vehicles of any quality is the pastime of the moneyed classes. It cannot be otherwise, if sound and reliable vehicles are to be built and sold. The motor tricycle is not, and cannot be, an adequate fill-gap. It possesses certain drawbacks which are too well known to need detailing here, but the chief—which are cumbersomeness and storage—may be cited. It is not a self-propelled vehicle which can appeal to the presently huge body of road users who will purchase automobiles in thousands if the right thing in the right form is offered to them. And it will be offered to them from without, if not from within. Consider the Werner motor bicycle as a type; although the Werner has its faults, and is open to improvement, the demand for this machine is already largely in excess of the supply, and continues to grow. Are the majority of our English manufacturers going to stand still and see this branch of industry practically monopolized by foreigners, as it already promises to be? Some six years ago we more than once urged the cycle trade seriously to consider the automobile industry, and we have no hesitation in saying that had they done so, had they stepped in and resolutely grappled the subject with the enterprise and resource we have hitherto looked for from Englishmen, there would now have been fewer importers' depots on Holborn Viaduct and in Long Acre—or even none at all. This branch of the automobile industry, which the big vehicle constructors have hitherto disregarded, will bulk big beside it before very long, and it is only reasonable to hope that our own people will this time make sure of getting their share and a bit over. We know that certain firms already have the matter under consideration, but let them beware that they do not nibble only where they should bite. Brother Jonathan, who, alas! takes so many rises out of us, but who in the bulk

has never approached, to say nothing of surpassed us, in the matter of cycle-building, is hard down on this particular trail, and it is from the other side the pond that the attack will come. We speak of what we have already seen, and what we know many members of the trade have seen. We do not believe that English cycle manufacturers cannot produce such work as that we have in our mind—equal in quality and price to the houses of the great combine country. The market is already open for the right thing, and this is shown by the success of the one or two firms of British cycle manufacturers who have had the pluck, and the enterprise to make a thoroughly good motor bicycle. By reason of its portability, ease of storage, and general handiness, the motor bicycle will at no very distant period very largely displace the present man-propelled machine, for to our view the application of the light motor to the narrow gauge machine wears all the appearance of the next forward step in cycle construction, to follow the pneumatic tire.

A New Prodigy

A 24-hour race was given in Roubaix on July 28 and 29, and the result is that an unknown lad, a baker's aid, like Huret used to be, came out victor in such a manner that he will certainly be heard from again. Out of 22 entered, 20 started. The last hour pacers were put in. During the entire 23 hours Lepoutre, the favorite, and young Baert were together. At first no special notice was taken, but when the public saw after hours and hours that the lad—17 years old—had made up his mind to stick to Lepoutre's rear wheel, the interest increased. In the last hour, paced by a tricycle, he took the lead with ease, passed his rivals again and again and finally won, covering 583 kilometers 333 in the 24 hours, as against 580 kilometers 633 to Ch. Kerff and 579 kilometers 466 to Lepoutre.

The Wheelmen's Protective Association, of Salt Lake City, which now numbers 700 members, has grown tired of supplicating the city authorities for improvements. At the last meeting it was unanimously decided to wait until the fall election and then work for candidates who are known to favor cycling measures. The president stated that cyclists who had appeared at meetings of

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the council had been actually insulted. A committee was appointed to formulate plans for members of the association in connection with the coming election.

Changes of ownership of cycle stores: Claude Curtis to Fred Klatt, Osakis, Minn.; C. A. Wilkins, half interest to M. Vanator, Spencer, Ia.; Paul Kvemven to P. Herried, Winona, Minn.; A. J. Sweeney to Wilkins Toy Co., Keene, N. H.; F. L. Harvery to W. J. Miller, Windsor Locks, Conn.; O. S. Decker to Clarence Ferry, West Chicago, Ill.; Finn & Chretien to Annie Krumholz, 625 Main street, Buffalo; Benson & Gunderson to W. F. Crombie, Black River Falls, Wis.

A new company, the Forskell Motor Co., of Anderson, Ind., has bought the patents on and is now manufacturing the Kelly valve inserter and the Kelly repair tool. The former is the only one of its kind made. It is used for replacing valves in tires. No vulcanizing is required, neither is it necessary to cut the tire. The valve is placed in jaws of the tool, its handles are pressed together, and the valve slides easily into the tire. The Kelly repair tool is the original tire-repair tool using rubber bands, with slotted needle.

Major Taylor was seriously hurt by a fall at Boston last Wednesday. He and Lawson met in the final heat of the one-third mile race. Their pedals struck on the last lap and Taylor was thrown over the banking. He was unconscious for a long time and has been unable to take part in any of the events run since that date. The same evening Albert Champion, in a match with Taylor, rode the first mile of a five-mile race in 1:29 4-5.

One of the Elgin papers published a story last week to the effect that W. H. Fauber would shortly take possession of the factory formerly occupied by the Elgin Automobile Co. A lot of alleged details were furnished. At the moment there are no appearances of an immediate move from the old quarters. Mr. Fauber is not prepared, at present, to authorize any statement relative to the matter.

Henry E. Ducker, rosy of face and buoyant of spirit, was seen recently at Albany, where, with another cycling veteran, he boarded a train for New York to take part in the veterans' century run. Ducker looks

as young as he did nearly a score of years ago, when he managed and promoted, for the Springfield Bicycle Club, the world-famous Springfield tournaments, when racing men journeyed from every quarter of the globe to the Massachusetts town to uphold the colors of their countries. Mr. Ducker is a state employee at Albany, in charge of the state printing plant, but his home is still in Buffalo.

The Standard Welding Co. is suing the Olive Wheel Co. for \$836.60 for goods delivered. When the case was called a few days ago a motion for a continuance was made on the plea that the president of the defendant company was away on his vacation. The attorney for the plaintiff asserted in court that the sooner the Olive company went into the hands of a receiver the better for all parties concerned. Many other concerns, he said, had claims against it, and its officers were seeking to delay proceedings so that judgments might not be entered against them.

Several New York export firms recently made inquiry at the eastern office of this paper for the addresses of firms making cycle parts and sundries, which would seem to prove that there is considerable demand abroad for this class of American product. An altogether agreeable fact in addition is that the firms request sample copies of the Age for their clients abroad.

A new one-third kilometer track was inaugurated at Amsterdam, Holland, on July 28. The principal event was an invitation race in which the old champion, Jaap Eden, took part, but only finished fourth. Vanden Born, the Belgian rider, was first, followed by Mulder and Broka. A 50 kilometers paced race was won by Bovy in 55:40.

Stimson scored a record in beating McEachern at Baltimore Thursday, riding 20 miles in 30:18 2-5. Next day Waltham defeated Moran, at 25 miles, at Providence, in 38:09, said to be a state and six-lap track record.

The factory at Marshall, Mich., in which the once famous Royal cycles were made is now given up to the manufacture of fly killers!

On Saturday, at Revere, Moran defeated Nelson, at 25 miles, by nearly a quarter of a mile, in 40:01 1/2.

PARTS AND MACHINERY AT BUFFALO

In addition to the exhibit of complete automobiles at Buffalo, to which reference was made last week, the following exhibits are of interest to those engaged in the industry:

The Buffalo Gasolene Motor Co. exhibits its automobile and marine motors and gearless transmissions. The motors run all day and the lack of vibration and noise impresses visitors. This company is now building complete running gears as well as finished automobiles and has added additional factory room.

The Pennsylvania Iron Works Co., of Philadelphia, exhibits its Globe gas and gasolene engines for marine uses, including two and four cylinder Globes from six to 85 horsepower. Some of these engines are now used by the fishing fleet of New York and Boston for use in calm weather. The well established Otto gas engine, made at the Otto Gas Engine Works, Philadelphia, which wins praise wherever used, is also exhibited in a large space where various types are seen, many of them working.

The Shelby Steel Tube Co. shows fine tubing for automobile and bicycle purposes and has spared no expense with its exhibit, which is one of the fine displays in machinery hall. The Phoenix Mfg. Co., of Hartford, exhibits its centering machines and small Traverse drilling machines. These can be furnished in combination and are of the finest workmanship.

Eastman metallic bodies, made by the Eastman Automobile Co., of Cleveland, O., are shown and the company's claim that they will not burn, warp or blister attracts the average seeker of information in that line. The Buffalo Spring & Gear Co. has an exhibit peculiar to its line of business, largely devoted to the regular carriage trade and not seeking automobile business as a special line. The company shows its bike wagons and bike gear as well as bodies in the white.

The Central Distributing Co., of Buffalo, makes an attractive display of balls, known as the Grant, Chicago, Excelsior and Cleveland. The exhibit is located in Automobile row. The Washburn shops of Worcester,

Mass., known as the Polytechnic Institute, show their sensitive drills.

Among the heavier machinery exhibited is that of the Ferracute Machine Co., of Bridgeton, N. J., maker of presses and dies and other sheet metal tools. These machines are used by various governments for minting purposes and are the creation of the famous mechanical engineer, Oberlin Smith. Cately & Ettling, Cortland, N. Y., exhibit Cately's carriage attachments, consisting of buggy springs and top levers for lowering tops from the inside. This little article makes the lowering and raising of the carriage top a trifling matter and has done away with a lot of trouble. The Wilmarth & Morman Co., of Grand Rapids, Mich., shines with its drill grinders and claims to be the manufacturer of the largest and most complete line of drill grinders in the world. The Standard Tool Co., of Cleveland, exhibits its line of tools which are used extensively in railroad shops, shipyards, machine shops and structural workers all over the world, and its standard grip sockets and lathe sockets.

Among others who may be properly classed among automobile exhibitors is the Schubert Bros. Gear Co., of Oneida, N. Y., which shows bodies for automobiles and carriage gears. This company has done a good deal with automobile trade in bodies and its work has been pronounced good. E. W. Bliss Co., of Brooklyn, N. Y., maker of the Stiles power punching presses and castings, is a prominent exhibitor. The Cleveland Twist Drill Co., Cleveland, is showing a line of drills, self-feeding reamers, taps, cutters, etc. The Norton Emery Wheel Co., Worcester, Mass., has a brave exhibit of emery and corundum wheels, emery wheel machinery, tool and cutter grinders, the Bath machine indicator and India oil stones. The Bennett Mfg. Co., Hunt, N. Y., exhibits metallic dashes and fenders. The Walworth Mfg. Co., Boston, exhibits a great array of steam fittings and engineers' tools and several hundred wrenches for different purposes. Pratt & Whitney, of Hartford, whose fame as builders of lathes and fine tools is known

MACHINERY AT BUFFALO.

throughout the world, show a remarkable exhibit of machinery. Brown & Sharpe, of Providence, who have been called the Tiffany of their line, make an almost exact reproduction of their World's Fair display. The Diamond Machine Co., of Providence, makes a good display of grinding machinery. This concern is doing a good business abroad as well as in this country. The Prentice Bros. Co., of Worcester, Mass., exhibits a complete line of drills and lathes.

The Mietz & Weiss gas and kerosene engines made by August Mietz, New York, are exhibited. They are in use in factories, machine shops, printing establishments and other places. The company also makes a portable engine, on wheels, from one to 20 horsepower and a direct coupled centrifugal pump and kerosene engine for pumping purposes.

The Russell, Burdsall & Ward Bolt & Nut Co., of Portchester, N. Y., makes a fine exhibit and it is hard to understand how the designer of the exhibit arranged such an attractive display of bolts and nuts. This company absorbed Russell, Burdsall & Ward and the Portchester Bolt & Nut Co. and is doing a large business with carriage and automobile manufacturers.

Many regrets are heard that the American Bicycle Co. did not take part, as many are of opinion that its absence will be looked upon as a further sign of the decadence of the bicycle trade. Some people seem to think that it was bad policy, especially if it wishes to further spread its trade over Central and South America. The latter countries are liberal exhibitors and their representatives naturally wonder why the great bicycle corporation did not exhibit. Those who are exhibiting, however, will undoubtedly profit by the absence of their formidable competitor and while there is no immediate talk of big results they will certainly form connections and reap good results from their enterprise, especially in the countries alluded to above. The two principal exhibitors are the Geo. N. Pierce Co. and the National Bicycle Mfg. Co. The former company is represented continually by Messrs. Bowen and Smith and the latter by Messrs. Johnson, Jones and Thompson.

The E. R. Thomas Motor Co. is as energetic as its motor and the young man in charge is a splendid talker and never

fails to interest those who wish to inspect the Thomas motor bicycle. This together with the Thomas lectures at the factory will do much to educate and promote sales.

The Stratton Motor Bicycle Co., of New York, has an exhibit opposite Automobile row and the attendant in charge seems to be kept busy.

The Wadman Cycle Co., Utica, N. Y., exhibits the Regina bicycle, a chainless affair, and called the most recent instance of a new thing in a bicycle. The inventor claims that he gets over the dead center. The action is very much like that of the old English Facile, as the pedal only makes half a circle. Mr. Wadman has interested visitors and listeners, and gives a continuous lecture.

The tire companies are fairly well represented. Among the largest displays are those of the Diamond Rubber Co. and the Goodyear Rubber Co., of Akron, and the Fisk, of Chicopee Falls, Mass., whose exhibit is looked after from the Buffalo office. The Diamond Rubber Co. was late in getting its exhibit in order, but it is now in full swing. Others who make good displays are the Pennsylvania Rubber Co., of Erie; the Revere Rubber Co., of Boston, and the New York Belting & Packing Co., whose automobile tire and the Midgeley tubular wheel are the parts of the exhibit which interest automobile makers. The Emery Tire Co., of Providence, shows the Emery tire, which is said to combine the merits of the pneumatic and the solid. The tire is a circular core, of rubber, with cells so arranged as to form air chambers, utilizing the air as a cushion. This is covered with a rubber casing that may be replaced or repaired without injury to the core, and which can be put into pneumatic tires which have been previously used.

A noteworthy exhibit is that of the 20th Century Mfg. Co., of New York. President Crary spread himself and went to considerable expense in making a display which is constantly crowded. Fred Castle spent a month in creating the regal display presented. The large booth is fitted up in Oriental splendor and the commanding feature is a life size solid gold model of Maude Adams, which occupies the center of the exhibit. President Crary personally designed very attractive stationery, which is offered free, together with other writing materials, and

JAPANESE TA BASKINIAN



SOLID GOLD STATUE OF MAUDE ADAMS

Which forms part of the Twentieth Century Mfg Co's. exhibit at the Pan-American Exposition.

MACHINERY AT BUFFALO.

visitors are invited to write their letters in the booth. The company shows all its well known lamps and a representative of this paper was told that the sales at the show and the profits would pay for the cost of the exhibit many times over.

The Veeder Manufacturing Co., of Hartford, has provided an exhibit of instruments, and shows the Veeder metal, which is finding its way into the working parts of many time and registering instruments. Many people, scientifically inclined and workers in fine machinery, are interested in the Veeder exhibit.

The American Roller Bearing Co., of Boston, exhibits its well known bearings, for which K. Franklin Peterson, of Lake street, Chicago, is the western representative. This bearing is having a good sale, and is said to be giving satisfaction wherever used for carriage or automobile purposes. The Standard Anti-Friction Co., of New York, also a maker of anti-friction bearings and running gears, has a good exhibit in the automobile section. This company, which recently acquired the Batavia Wheel Works & Rubber Co., is evidently preparing for big business. It also owns factories at Amesbury, Mass., and Wilkesbarre, Pa.

A western exhibitor, the Timken Roller

Bearing Axle Co., of St. Louis, one of the first companies to introduce the ball bearing for heavy work, makes a good exhibit. The company gives a good exhibition of its roller bearing in the Ordnance building.

The Universal coaster brake, for which Brandenburg Bros. & Wallace, of New York and Chicago, are the selling agents, is exhibited jointly with the National bicycle. Mr. Conway, the general manager, pointed out a western concern who wrote: "We have had nothing but the best kind of luck with the Universal and you have rightly named it, as it is universally liked, and we propose to adopt it next year almost exclusively because we are sure it is all right."

The Morrow coaster brake needs no introduction. A working model is seen at the Thomas motor bicycle stand near the eastern entrance of the machinery building. Volumes might be written about the pioneer Morrow. President Fulton is on the water speeding away to the farthest confines of Asia to preach the gospel of Morrow coaster brakes and Ralph D. Webster will do the selling at home.

The Premier coaster brake is also on deck. The makers admit that the Premier had its troubles early in the game, but say it is now mechanically solid and fool proof.



AT SEVENTY MILES AN HOUR

Some weeks ago an article appeared in this paper detailing the sensations of a reporter who was whisked through the air at something like 30 miles an hour on the front seat of a quad. Now comes a story, from the London Mail, one of the Harmsworth papers, relative to a ride with S. F. Edge during which the machine is said to have traveled at 70 miles an hour. The operator had just issued a caution to "sit tight," when "hoch, hoch, hoch," coughed the machine, as if it were rehearsing a greeting to the Kaiser, and with a puff and a farewell thump or two on the stones behind it, the 70 horsepower Napier hurtled down the long, straight road.

"How fast are we going?" I shouted.

"We are not going fast at all. We are tooling along gently."

"But the speed?"

"Oh, about 50 miles an hour."

The Seine on one side of us, and the trees and houses on the other, rushed past as they seem to rush when looked at from an express train, and the wind grew a little colder and blew harder.

Edge treats his automobile like a favorite mare, and it appreciates it. The great mass of machinery sprang forward like a greyhound, and the wind ceased to be wind at all, and became a thin sheet of ice. I had taken out my handkerchief a moment before to wipe my streaming eyes, but they were dry again, and the handkerchief was being pressed against my mouth. It was only with an effort that I could put it back into my pocket.

"Sixty miles an hour," shouted my companion. I could see that he had shouted the words as loudly as he could, but his voice came to me faint and weak like the voice of a man who had been very ill or like a call from a long distance. "Now," said Edge, and pressed his right foot down upon the lever once again. There had been a steep down grade before us when he spoke; but as I looked at it the road rushed up and was swallowed by the Napier, which gave a cough of

satisfaction, like a giant who had gulped a hearty meal and wanted more.

On we went, still without the slightest semblance of moving really fast, but with that sheet of thin crumbling ice ever before our face and the scenery scurrying past us. Then a wonderful thing happened. Another automobile, a small, red-painted Renault car, appeared in front of us and vanished. "Where is it?" I shrieked, believing for the fraction of a second that we had crushed the little car into the ground. The mechanic who sat crouching at our feet looked up and pointed to the road behind us. The Renault was perched on the brow of the steep hill which we had swallowed, and as I wondered how it had got up there it vanished, and the gluttonous Napier had gulped down another mile of road.

"Wough! Grrgle!" said the automobile, and suddenly uttered a loud, rasping cry like that of an angry baby troubled by a pin. We slowed down gradually and stopped as quickly as we could. The Napier sweated heated petrol, which made our eyes and nostrils tingle. Mr. Edge and the mechanic, both with serious faces, jumped down and bent over the wheel. I got out, too, stooped down to see what was the matter, and inadvertently touched the tire. It burned me. The rubber was hot, almost to melting point.

Another bolt put in, a slow run in comparison—down to the nearest township, and we stopped once more to cool the automobile, and to give it a drink of petrol. Eighteen gallons was the dose it swallowed, and even then its tank could have held more.

"Go on," said Mr. Edge. The great thing snorted once or twice and shouted "Bon!" in French. The "shout" was one loud explosion which echoed like a gunshot, and the automobile dashed forward. Again we rushed ahead, flying near the ground, it seemed, rather than rolling on it, and bumping the road every now and then with a concussion which sent me up

CHANGES SINCE AUTO CAME.

from my cushioned barrel-shaped seat like a ball from a cup. We slowed down again, and Mr. Edge invited me to stand on terra firma and watch the leviathan run past.

As the machine disappeared, waving wreaths of petroleum puffs and dust as a farewell behind it, I noticed that terra was less firma than it had been before my drive. The ground seemed to quiver underneath my feet, and I could feel the rushing and the bumping of the Napier in my very bones. It hurt almost as I stood there; but in my seat, going 73 miles an hour, I had felt no sense of unduly rapid motion. Good gracious! what was happening? The huge machine rushed down the road toward the place in which I stood like an express train mad, and as it passed me it seemed to leap with all four wheels up from the ground and disappear into the cloud of dust and stones.

Presently the beast came back again, its black radiator grinning in derision at my nervousness. The shock of seeing it go past at that terrible speed had been so real that I could hardly gather courage to climb into my seat again.

"Home," said Mr. Edge, laughing, and slowly, at less than a mile a minute, we dropped down into the Bois de Boulogne and into Paris.

I shall always feel ashamed of mentioning an automobile as "it" in future.

Changes Since Auto Came

The introduction of a new method of transportation has invariably been followed by changes and conditions on the lines of readjustment and general progress, says a writer in the New York Commercial Advertiser. That prehistoric gentleman who had the courage to inaugurate broncho busting brought about a social revolution of which he wotted not. The locomotive changed the face of the landscape and the history of the race. The boom of the bicycle had in its train an era of good roads and a raising of the mental and muscular standard of civilization. When a practicable airship is an accomplished fact there will be a corresponding widening of our physical and moral horizons. And in the meantime

the motor vehicle is doing its special and peculiar work in the like manner.

One of the many things that the auto has brought to pass is an intelligent interest in mechanical principles as applied to purposes of transportation. To be a chauffeur worthy of the name one has to become familiar with the machinery of one's machine. It is true that a good many auto owners rarely venture forth without a companion who is a professional expert, on whom falls the task of making repairs or persuading fractious wheels, valves or pistons to do their duty. But such are in the minority. As a rule the man behind the levers is thoroughly conversant with the machinery beneath him, and no small portion of the pleasure of automobiling comes from a consciousness of one's knowledge of the thews and nerves of one's metallic steed. Go to the reading room of the Automobile Club of America and the chances are that you will find a goodly proportion of the members present poring over books that have to do with the science of mechanical propulsion. Or it may be that they are studying technical articles that form the bulk of the reading matter of the periodicals devoted to the auto and its well being. The conversation is punctuated with terms that are Sanscrit to the uninitiated. Eccentrics, cut-offs, feed valves, accelerators, condensers, compensators, oscillators, exhausts and the like, are discussed with a familiarity that is positively awesome to the casual layman. The joy of an ordnance officer in the presence of a new gun breech isn't in it with the sheer ecstasy of a group of millionaires passing on the latest wrinkle in auto internals. It is a primary course in applied mechanics to listen to these impromptu lectures at the club.

Not long since the writer, while taking part in a certain club run, spied by the roadside the auto belonging to a gentleman who is believed to be worth about \$20,000,000. By the side of the machine stood the groom—the paid expert. But the many-times millionaire was not visible. Just then there came from beneath the vehicle a sound as of muffled blows. Clad in an oily jumper, his face masked with perspiration and grimy grease, was the man of money, stretched on his back, a hammer in one hand and oil can in the other. A screwdriver and a wrench were thrust in the waistband of a pair of disreputable overalls.



INFORMATION FOR BUYERS AND BUILDERS



The Morgan Motor Co., Brooklyn, N. Y., has decided to add a department for the furnishing of transmission gears of all descriptions, differentials, running gears, spark plugs, coils, batteries, carburetors, mufflers and, in fact, every part used in the construction of a motor or motor vehicle. The company now has in preparation a catalogue which will include this entire line. These parts will be furnished either in the castings or finished. Outfits will be made up from which vehicles can be built by the amateur. The Morgan company will also, in a short time, have a light, low runabout, holding two persons, on the street. It will be made in two types, steam and gasoline. The gasoline wagon will be equipped with the Morgan upright, water-cooled gasoline engine and A transmission. The steam will have the double cylinder steam engine, mounted so as to be readily accessible. The boiler and burner will not be under the seat. These wagons will be of similar design and price, the latter in the neighborhood of \$500. All the parts of these wag-

ons will be sold separately to those desiring to build their own machines. The address of this department, which will be in charge of Mr. Wyatt, is 50-54 Columbia Heights, Brooklyn, N. Y.

The Knickerbocker Wagon

Among the wagons which will take part in the New York-Buffalo run next month and about which nothing has been said in the automobile press, is the Knickerbocker, made by the Ward Leonard Electric Co., of Bronxville, N. Y. Like many of the wagons which are rapidly becoming popular in this country, the engines, tanks, carbureter, etc., are placed forward, where they are readily accessible, and where the vibration is reduced to a minimum. The power is transmitted directly to the back axle by a driving shaft running lengthwise under the car body. In this shaft are several universal joints, making it practically a flexible shaft. The Knickerbocker has three principal speeds forward, from eight to 30 miles an hour, controlled by one lever on the steering col-



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umn. It is claimed that it has climbed all the hills around Bronxville, which is saying a great deal, as anybody acquainted with that pretty town will appreciate.

In ordinary practice the high speed gear is in use over 90 per cent of the time, and the firm points out the importance of having the least wear, noise and loss of power under this condition. In the Knickerbocker, when the high speed is in use, no gear is in action, the transmission of power being direct from the engine to the bevel gear on the back axle. The company points with pride to the fact that its car is one of the few having the feature in its variable gear mechanism. The water is circulated by an original form of thermo-siphon, and no pump, involving loss of power, is required. On the dash-board of the Knickerbocker is a universal oiling tank, by which the operator can force oil at will into the engine case, the variable gear case or the back axle case while in action. The wagon is fitted with a 5-horse power De Dion motor and carbureter, and, with a rumble, weighs 700 pounds. The company is also making a tonneau model for four passengers, weighing, with tanks filled, 800 pounds.

The Dayton Hand Pump

The Dayton hand pump, made by the Dayton (O.) Motor Vehicle Co., is warranted by its manufacturers to be strictly first-class in design and workmanship. The pump is $\frac{3}{4}$ inch diameter, $3\frac{1}{2}$ inch stroke, and is provided with two check valves, one in the suction and one in the discharge. The pump is made entirely of brass, except the levers, which are steel. An extension of the plunger working in a bearing relieves the plunger of side strain. The operating lever is provided with a turned wood handle, and when not in use is laid down out of the way as shown in the cut. When in use the hand lever is lifted to an upright position and its forked end pushed down

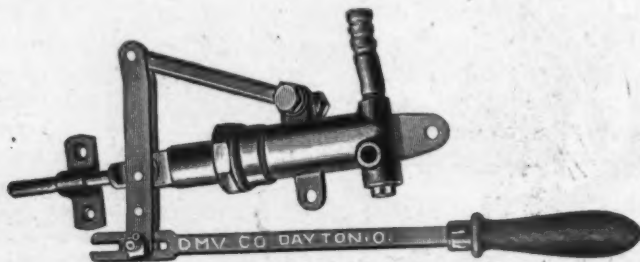
astride a bolt provided for that purpose, thus securing the necessary leverage. Every pump is thoroughly tested against several hundred pounds pressure before shipment and is fully warranted.

Pratt & Whitney Catalogues

The Pratt & Whitney Co., Hartford, Conn., publishes a number of small hand-books that should be in the hands of every user of machinery. They include one detailing machine tools, one on small tools and another covering the standard gauges produced by the company. Each book is complete in itself, so far as the line it covers is concerned and contains a fund of information to which every mechanic should have access. The machine tool book contains 310 pages, devoted entirely to the larger class of tools, from which almost any equipment can be chosen. The small tool catalogue goes into details regarding this class of tools and gives standards in threads in all existing forms, a feature of great service, especially as foreign threads are beginning to enter largely into the automobile business. Tables of other information that every handler of tools should become acquainted with are also given. The book of standards, it goes without saying, is essential to all well-posted makers and users of machinery and is a valuable volume for the shop library.

Points to be Appreciated

While gas engine makers are working to overcome the difficulties arising from defective spark points, particularly in the contact form of make and break in the primary circuit, Baker & Co., Newark, N. J., are producing sparking points which they claim overcome such difficulties and give long life with less wear than any form of point heretofore used. These, the company states, are made from a composition of platinum and



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other metals, or rather an alloy that is harder than platinum and after years of constant use show no appreciable wear. A set of these points has been in use since 1894 in the company's works and is as good as new. A book covering the "points" will be sent on application.

Fusible Plug, Gauges and Tools

The Ashcroft Manufacturing Co., New York, has issued a book on gauges and other articles, tools, etc., for the use of steam users and fitters, that will be found worth keeping for ready reference. Gauges of all kinds, including pressure, alarm and recording gauges, are listed and described in detail; revolution counters, locomotive, marine and engine room clocks, water gauges and cocks, indicators, fusible plugs, and numerous other things necessary to the successful equipment of steam plants are listed.

The Wells Folding Top

The Wells Manufacturing Co., Des Moines, Ia., has brought out a new folding top for automobiles and buggies which is easily attached or detached. Beside these features, it is comparatively light, folds into compact form and when down is out of the way of the operator. The advantage, when used on steam carriages of the standard type, is that the top does not extend more than five or six inches beyond the lazy-back, consequently there is no danger of the leather being damaged by the heat from the stack nor of the top catching the wind and forcing it into the chimney.



The Wells Folding Top—Up.

The company holds the Iowa state agency for the Locomobile and shows the Wells

top on one of those carriages. Mr. Wells, the inventor, is an old carriage builder and his invention was complimented by



The Wells Folding Top—Lowered.

the patent office people on account of the clever and ingenious mechanism of its construction.

The New Locomobile Plant

The new works of the Locomobile company, at Bridgeport, Conn., which were visited recently by a member of the staff of this paper, are among the finest of the eastern factories. They were especially constructed, in every department, to meet the requirements of the business and are located on the Sound, near what is known as Barnum's Seaside Park.

Two railroad tracks occupy space on one side of the main building and car loads of Shelby tubing were being discharged when the writer called. On the other side of the railroad tracks and between the tracks and Seaside Park, are several acres of land owned by the company and it is stated that another building will be erected there as soon as the demand requires it.

The power house is a few yards away from the main building. A water tower capable of throwing thousands of gallons per minute will rear itself alongside the main building. All the elevators are hydraulic. The factory will be run, in the near future, entirely by electricity, each of the four floors being independent of each other. It is now operated by steam. The building is of brick and iron and is absolutely fire proof.

The heavy forging is done in a separate building. A complete testing building is

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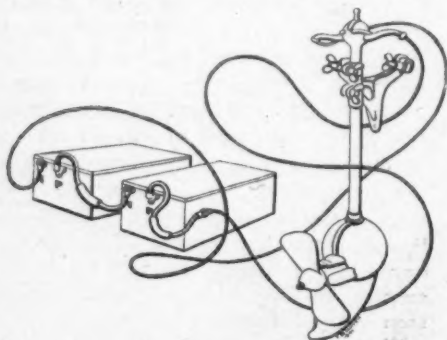
also part of the group. The recent move from the old building cost the company thousands of dollars and interfered very much with its shipments but the added features have already made ample compensation.

Superintendent Speers, who showed a representative of this paper around the factory, stated that the output was about 10 vehicles a day, that a capacity of 20 per day was his aim and that he believed when the factory got running smoothly it could be done.

A Submerged Electric Motor

Something new in the boat motor line is offered by the Submerged Electric Motor Co., of Menomonie, Wis., consisting of an electric motor entirely enclosed in a casing and to which is attached a rubber propeller and guiding mechanism, as well as clamps for attaching the whole outfit to the boat. The illustration will give a fair idea of the appearance of the motor and parts, showing how little there is of it and how easily it can be fixed in place.

The speed of the average boat, equipped with one of these motors, is four miles an hour, but with a larger battery, it is claimed, six miles can be attained. The



accumulators are carried under the seats and connected by wires to the motor, the wires leading through the steering device. The company is offering special inducements just now.

Of Interest to Boatmen

Captain Charles W. Foster, New Haven, Conn., has issued a book covering the construction of his patent reversing propeller, shaft, etc., for marine launches, which he will be pleased to send on application. The

hub of the propeller is made in sections, fastened together reliably. Into each of these sections one of the blades is fitted and fastened, arranged to turn about 70 degrees. The mechanism for turning the blades is inclosed within the hub and thoroughly protected. To the hub is connected and securely fastened a special seamless brass tube, which extends through the stern bearing and post into the boat. To this tube is attached the balanced ball thrust, which reduces friction to a minimum and prevents lateral movement of the thrust bar tube, or the propeller proper, to which it is attached and with which it rotates. By this method of manufacture it is impossible to lose a blade or any part of the mechanism.

The propeller has been demonstrated in actual service for three years and the maker claims has never had a break of any kind.

An Old Idea Revived

The Ball tire is to be marketed. It consists of an ordinary tire casing filled with rubber balls. The tire is being marketed by the Ball Tire Co., of 1123 Broadway, New York, but the company is not yet ready to fill orders, as it is having some trouble in getting the tire manufactured. The company claims that its tire possesses all the cushion elements of the pneumatic tire and at the same time has the support effect of the solid tire. It cannot creep and it is said will outwear two pairs of ordinary pneumatic tires. Should the tire become punctured through any cause the balls are said to support it and the tire can be ridden indefinitely without danger of injuring the rim. A similar tire was offered for sale some years ago, but obtained only fleeting if any popularity.

Good Words for Tonkin

The Tonkin Steam Carriage Supply Co., Oswego, N. Y., is just completing a new factory to take care of its automobile business, which has grown tremendously. It is along the side of the Royal well factory, which is one of the largest institutions in the United States. The Tonkin company also manufactures a line of steam carriage specialties and will branch out in that line considerably. Writing to Mr. Tonkin relative to local speed trials, John A. Wells, of Philadelphia, says:

"In the automobile races held at Point

INFORMATION FOR BUYERS.

Breeze we won the 5-mile race for steam carriages with a Howard automobile fitted with one of your boilers. We ascribe our victory to the rapid steaming qualities of your boiler, as we started with 240 pounds of steam and finished with 80, while our nearest competitor started with 400 and finished half a mile behind us with only 30. At Trenton, on July 4, we entered our same road carriage, fitted with your boiler, against a Howard racing machine fitted with another make of three times the heating capacity, and in spite of this handicap we succeeded in making the fastest mile of the day, for which we were awarded a special prize. We cannot praise your boiler too highly, not only on account of its quick steaming qualities, but your dry plate seems to do all that is claimed for it in the way of superheating the steam and preventing the boiler from foaming."

Remy's Compact Dynamos

An igniting dynamo, of small and compact form, is made by the Remy Electric Co., Anderson, Ind. The company's business is rapidly increasing. Last week it had received orders for 375 and a subsequent order for 500 came in just at the time of writing. As the dynamo may be successfully used when running at any speed between 500 and 7,000 revolutions per minute, its possibilities are great. While batteries are suggested by the company as being useful in starting the engine to which the dynamo is attached, it has been informed by many engine makers that sufficient current can be

generated by the dynamo itself to ignite the mixture without the use of batteries. While this may be true, it is a safe plan to use a battery.

From descriptive matter supplied by the company it is learned that the dynamo known as type MV was built after carefully considering the advice of automobile and marine engine manufacturers, and is not only dirt, oil and water proof, but as near perfect from a mechanical standpoint as it can be made. This design will allow of a very large variation of speed and may be driven in either direction by either belt or friction drive.

It measures 7 inches in height by 5 inches wide by 7 inches long, and weighs 11 pounds. It is constructed with a permanent magnetic field and a laminated iron-clad armature. Its bearings are of more than the usual length and made of the best phosphor bronze bearing metal. They are provided with wick oilers to insure perfect lubrication with little attention. The brushes are of the pencil type. The marked speed of the machine is 2,500 revolutions per minute, but this may be greatly varied without an appreciable difference in the size of the spark.

The armature is perhaps the most important feature of a well designed generator of any kind and in the MV it is of the iron-clad, laminated core, drum type, and wound with double silk covered magnet wire. The lead wires from the coils to commutator are encased in sleeves after which they are bound down, shellaced and baked,



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making the armature electrically and mechanically equal to high voltage armatures.

The shaft is made of high grade tool steel of extra large diameter. The commutator is very much larger than is usual in proportion to the size of the machine and is mounted upon a steel core and insulated throughout with mica.

Porter Battery's Great Feat

Owing to the late hour of its occurrence it was possible to make brief reference only last week to the feat of the Porter battery, which propelled a vehicle the unprecedented distance of 187½ miles without recharging. A Baker running gear was used, and the body of the vehicle and motor were supplied by the Elwell-Parker company, of Cleveland. The entire outfit, exclusive of the batteries, weighed 600 pounds. The batteries also weighed 600 pounds.

The speed of the vehicle was limited to nine miles an hour. The entire distance was made on the boulevards about Chicago and the operators took all the time they chose in making the test. In other words, they make no secret of the fact that they made the test under as favorable conditions as possible, simply to demonstrate the possibilities of the battery.

Some time ago the same vehicle made a run of 150 miles at Cleveland. On that occasion 10 cells, weighing 350 pounds, were used. This time 10 cells, weighing 25 pounds apiece, were added. The speed on the first occasion was 10.91 miles an hour and on the second 9 miles an hour. Both runs were made with the regular Porter battery, which, the makers claim, has 35 per cent greater capacity than any other of the same weight.

Properties of Kartavert

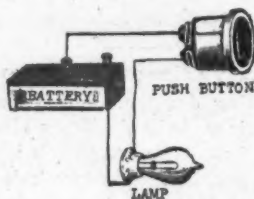
While perfect insulation is holding the attention of electric ignition experts and gas engine builders in general, it might be well to investigate the claims made for Kartavert, the product of the Kartavert Manufacturing Co., Wilmington, Del. This material can be used for hundreds of different kinds of manufacture. It is insoluble in hot or cold water, benzine, turpentine, oils, ether, bi-sulphide of carbon and other solvents. Acids and alkalis affect it but little. It resists the entrance of oils. It does not

ignite readily and will withstand high temperature. A short contact with water will not affect it, but if soaked for a time it will swell somewhat and resume its original size on drying. It can be glued to itself or other substances, and is very tenacious.

Kartavert is classified as hard and flexible. Hard Kartavert holds an intermediate position between metal and the various ebonyites, and plastics. It may be turned, sawed, planed, drilled and tapped as metal, admitting of a smooth surface, strong thread and fine polish.

To Light Your Water Glass

The illustration shows a small electric light outfit marketed by A. L. Dyke, of St. Louis. It is designed especially for steam rigs. The push button is placed near the throttle lever on the arm of the seat; the



button is placed in a ¼-inch hole, which allows it to come flush with the surface of the arm. The button has a pearl push. The battery being very small and weighing only about two pounds, is screwed underneath the seat. The lamp, which is contained in a small porcelain socket, is screwed at the top, back of the water gauge. The push button, battery and lamp are connected by a small wire, and when the button is pressed a light reflects in the mirror.

The American Steam Gauge Co., New York, Boston and Chicago, has a neat catalogue devoted to steam and air gauges, either single or duplex; also side or top outlet pop safety valves especially designed for automobile use. This company was the first to manufacture steam gauges in America, and has an extensive line of all classes of gauges. It might be well, therefore, for the trade to become conversant with the line by securing a catalogue. A good gauge is a necessary article, as many steam wagon drivers have found out to their sorrow by having secured defective instruments. The gauges are made in sizes

CHAIN TRANSMISSION OF POWER IS SATISFACTORY

ONLY when frictional rivet surface and tensile strength
are large in proportion to the working load.



NO. 155 FOR LIGHT RUNABOUTS

Equip your machines with large chains and avoid trouble.
Diamond Chains have large nickel steel hard rivets, are accurate and highly finished.

The Automobile and Cycle Parts Co.

DIAMOND CHAIN FACTORY
INDIANAPOLIS, IND.



FOR AUTOMOBILES

NO JOINTS
CREEPING
TROUBLE

Outwears

ALL OTHERS.

WRITE FOR CATALOGUE
AND PRICES

THE GOODYEAR TIRE AND RUBBER CO.

AKRON, OHIO, U. S. A.

LARGEST TIRE MAKERS IN THE WORLD

A Bit of SENSE

True merit always did and always will out-weigh a guarantee of any kind. We place the **DASEY PLUG** before the trade strictly on its merits—and no other way. A good plug speaks for itself by the results given—and an empty guarantee on paper only, is unnecessary. We have used our plug on engines ranging from 1 to 50 h. p. and



have yet to hear of **FAILURE** either through short circuiting or by breakage of porcelain—Something which, in our candid opinion, no other plug makers can say with truth.

Our price is not exorbitant, neither is our plug a marvel, but it is good and can be depended upon to give better

and more lasting results than **OTHERS** we can name.

Our prices are \$2.00 each, singly, and \$13.50 in lots of one dozen—net cash with order. We have bicycle motors in 1, 1 $\frac{1}{4}$ and 1 $\frac{1}{2}$ h. p. sizes; water jackets in 4, 7, 10 and 15 h. p. sizes; running gears and all parts necessary for constructing steam or gasoline vehicles. We represent the complete line of Dow coils, batteries, etc., suitable for all forms of gas and gasoline engine ignition. These are the **best by every test** and we can prove it to our competitors or the trade upon request.

THE P. J. DASEY CO., 160-162 Washington St., CHICAGO, U. S. A.

ranging from 2 to 5 inches, and the pop valves from $\frac{3}{4}$ to 1 inch.

B. V. Covert, the Lockport, automobile builder, who has also done a good business in automobile parts, has made up his mind that the business warrants expansion, so he has leased a three-story stone and brick carriage factory on Richmond street. The heavy work will be done on the first floor and the assembling and finishing on the second and third floors. Mr. Covert says that he is going to turn out a \$500 gasoline runabout.

Anthony G. New, engineer and editor of the Auto-Motor and Horseless Vehicle Journal, of London, who has been in this country for about two months, is now in New York, and will return in a few days to London. Mr. New is interested in a variable transmission gear which is said to be a splendid article of its kind and has been at the Buffalo Gasoline Motor Co.'s factory superintending the construction of several for that company.

H. M. Wells, who was for a long time with a leading steam carriage maker, is now open for an engagement. Mr. Wells is

known as a capable, working superintendent and is familiar with construction of steam and gasoline carriages. He is the owner of some important patents which can be utilized. He can be addressed at Westboro, Mass.

Rupert B. Bramwell, the publicity man for the DeDion company, is receiving congratulations in advance on his forth-coming marriage. Mr. Bramwell is of a sunny disposition, and the secret of his discontent while at the exhibit at the Pan-American and his petition to Manager Field to allow him to come home is now out. Here's hoping that the married life may run as smoothly as the DeDion motor.

Among the manufacturers who have decided to market the small motor designed by the MOTOR AGE and described in its columns is the Morgan Motor Company, of 91 Cliff street, New York. This company will also sell castings to those who desire to finish and assemble the motor themselves.

An automobile built by the Holyoke (Mass.) Automobile Co. for a New Yorker was delivered last Wednesday and will be used in the Buffalo-Erie road contest. It

ADVERTISEMENTS.

THE RACYCLE

THE PERFECT WHEEL.

Seven models, with a range of prices to suit all purses. Write us.

THE MIAMI CYCLE & MFG. CO.,
Middletown, Ohio.

Only \$2.98 And Three Hours on the
EMPIRE STATE EXPRESS
PAN-AMERICAN TO SYRACUSE.
Don't depend on special exhibition automobiles

See The **Century** At The Works.

CASTINGS

of the Bicycle Motor now being described in the Motor Age, full sized blue prints, carburetors, mufflers, spark coils, etc. for all size motors. Automobile, Tricycle, Marine and Stationary Gasoline Motors and Castings.

MORGAN MOTOR COMPANY,
81-83 Cliff Street, New York City

STYLISH AND DURABLE

Lamps for Automobiles

GRAY & DAVIS

Amesbury, Mass.
SEND FOR CATALOG "B"

The Geneva Automobile & Mfg. Co.

GENEVA, OHIO,

Steam Wagons, Running Gears, Engines, Boilers and Parts. Write for prices.

What is **AUTOMOBILISM?**
All who are interested in that question should consult the

"Motor-Car World"

which each month reviews the progress of the new Locomotion throughout the World. Published at 186 Fleet Street, London, England. Annual Subscription, post free to the United States, one dollar.

BANNER GAS LAMP

For 1900 is worth more than the price asked. Correspond at once with PLUM & ATWOOD MFG. CO., New York and Chicago.

THE MOTOR WORLD

Devoted to the Automobile and Kindred Interests.

NOT LIKE THE OTHERS

It's readable and you can understand what you read
PUBLISHED EVERY THURSDAY AT

128-126 TRIBUNE BUILDING, NEW YORK
\$2 Per Year. Sample copies gratis.

BUFFALO PAN-AMERICAN

Automobilists coming here arrange ahead with us for storage, supplies, repairs. Splendid location. Efficient service. Agents for new and second-hand automobiles. Will consider representation for good concerns.

BUFFALO AUTOMOBILE EXCHANGE

1097 Ellicott Square :: :: 320 Franklin Street

OUR

Enamels and Colors in Japan

Are the most durable for Automobile Bodies and Gears. Send for sample card.

RUBBER PAINT COMPANY

154 West Van Buren St.,

CHICAGO : : : : ILLINOIS

THE WORD Locomobile

Refers to Steam carriages made by the LOCOMOBILE COMPANY OF AMERICA only. It is a trade mark. :: ::

7 East 42nd Street, :: :: NEW YORK

There is no SUCCESS like

KEATING MOTOR BICYCLE SUCCESS

KEATING WHEEL & AUTOMOBILE CO.

MIDDLETOWN, CONN.

MILLER ROLLER BOILER • • • TUBE EXPANDER

For expanding 1/2-in. Copper Boiler Flues in Automobile boilers. \$4.00 Each.

97-99-101 CHAS. E. MILLER, New York
Rade Street. City . .

Dietz Automobile Lamp

Burns kerosene 24 hours with one filling. A simple, efficient Lamp giving a fine light and which can be depended on to stay alight in spite of wind and jar. Especially suited for touring.

R. E. DIETZ COMPANY, - 37 Laight St., New York

MODERN CYCLE REPAIRS

ONE DOLLAR TO CYCLE AGE
OR MOTOR AGE SUBSCRIBERS

THE CYCLE AGE - CHICAGO

Sheet Steel Parts

FOR

Bicycles and Automobiles. Special stampings made from drawings or blue prints, all of a superior quality. Send for Catalogue.

THE H. A. MATTHEWS MFG. CO., Seymour, Conn., U. S. A.

ADVERTISEMENTS.

has 20 horsepower, is built after the European racing models, and is said to be good for a mile a minute. The cost of the machine was in the neighborhood of \$8,000. A retired general is the owner.

T. E. Griffen, for the past two years assistant to J. C. Spears, superintendent of the Locomobile company, resigned his position July 6 to join the forces of the Stearns Steam Carriage Co. Griffen is favorably known throughout the trade, having represented the Locomobile company in nearly all of the automobile race meets held up to the present time. He holds the record for one mile, making the distance in 1:06 at Chicago, Sept. 18, 1900. The same day he rode a mile backward in 2:56.

It is reported at South Portland, Me., in which town the factory that formerly produced Lovell bicycles is located, that the plant will open up shortly for the manufacture of automobiles. No names have yet been mentioned in connection with the enterprise.

The Electric Vehicle Equipment Co., Brooklyn, N. Y., is just completing a heavy electric truck for the Hall Safe Co. Mounted on the truck is a dynamo which will be used for safe hoisting purposes. The makers are building all sorts of heavy trucks and seem to be doing nicely.

There is great activity at the mills of the Goodyear Tire & Rubber Co., at Akron, in anticipation of a rush of business next season. Two 250 horsepower boilers are being installed, and an addition to the factory, 150 feet long, is being erected. This will be used as a shipping department.

Thomas B. Jeffery, now of Kenosha, Wis., is interested in the Chicago Solar light, one of the many gasoline devices now on the market. He has just moved the factory to the Wisconsin town.

Park Densmore, manager of the Foster Automobile Manufacturing Co., Rochester, N. Y., says that his concern will largely increase its capacity. The company has adopted the Keim motor.

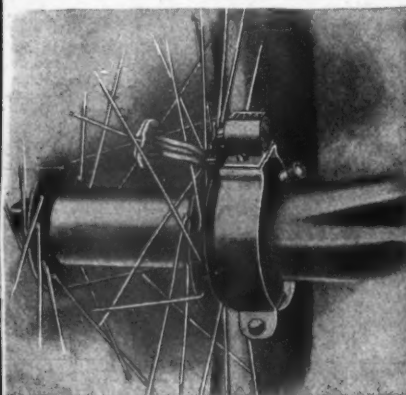
Last week two Toledo steam carriages were given a severe test over sandy Ohio roads as a preliminary to their shipment to South Africa.

The Searchmont Co. will open a Chicago branch about two weeks hence, in charge of a gentleman named Metchener.

When buying an Automobile see if it is equipped with a

VEEDER ODOMETER

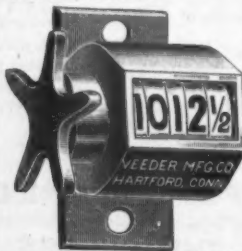
If it is you may feel reasonably certain that its manufacturer pays careful attention to detail and it is a guarantee that he is not exaggerating the efficiency of his motor power or over-estimating his fuel capacity.



Odometer with band bracket Price **\$3 50**

The following leading automobile manufacturers have adopted the Veeder Odometer and offer it as a regular equipment without extra charge.

The Locomobile Co. of America, Bridgeport, Conn. The National Automobile & Electric Co., Indianapolis, Ind. The De Dion-Bouton Motorette Co., Brooklyn, N. Y. The St. Louis Motor Carriage Co., St. Louis, Mo. Milwaukee Automobile Co., Milwaukee, Wis. Electric Vehicle Co., Hartford, Conn., (Gasoline Carriages.) Rochester Cycle Mfg. Co., Rochester, N. Y. The Steamobile Co., Keene, N. H. Knox Automobile Co., Springfield, Mass. Buffalo Electric Carriage Co., Buffalo, N. Y. Foster Automobile Co., Rochester, N. Y. The Kidder Motor Vehicle Co., New Haven, Conn. The Beardsley & Hubbs Mfg. Co., Mansfield, Ohio. The Aultman Co., Canton, Ohio.



**The Veeder
Mfg. Co.**

HARTFORD, CONN.

Makers of
Odometers,
Cyclometers,
Counters,
Fine Castings.

Odometer, only price **\$3 00**

Made for 24, 26, 28, 30, 32, 34, 36, 38, 40, 41, 42, 44, 46, 48, and 50 in. wheels.
18-page catalogue free.

ADVERTISEMENTS.

G. H. Davis, of Portland, Me., is said to have made a successful acetylene vehicle after two years of study and experiment. He has been assisted by W. M. Bardwell, of New York. The machine carries 100 pounds of carbide, which is fed, automatically, no doubt, into a water tank.

The factory of the Winona (Minn.) Wood Rim Co. was destroyed by fire on August 7.

20th Century OIL AND GAS
Bicycle, Driving and Automobile
HEAD-LIGHTS
For sale by ALL JOBBERS AND DEALERS
20th Century Brand of Carbide.

MISCELLANEOUS

Advertisements under this head 5 cents per word first insertion; 3 cents per word each insertion thereafter. Cash with order. Express orders, postoffice orders or stamps received.

FOR SALE

FOR SALE—The Automobile Storage and Repair Co., 57 West 88th St., New York, have new and second-hand steam, gasoline, and electric carriages constantly on hand and have always some special bargains.

FOR SALE—Winton automobile, fall 1900 model, in good order, \$800. Will teach purchaser to operate and accompany him home. F. E. Low, Stubenville, Ohio.

NO. 2 LOCOMOBILE, first-class condition \$485.00; No. 2 Locomobile, almost new, been run 75 miles, \$650.00; brand new "Locosurrey," \$1,075; Orient quad, \$300. I personally guarantee all the above. In stock ready for immediate shipment. A. L. DYKE, Auto Supplies, office Linmar Bldg., St. Louis, Mo.

TWO BARGAINS—One of our model No. 1 carriages used but a few miles for demonstration purposes. One model No. 2 Locomobile with brand new, latest style engine, new compensating gear and many improvements. Write us for prices on these and we will surprise you. **LOOMIS AUTOMOBILE CO.**, Westfield, Mass.

WANTED

AGENT WANTED to purchase second-hand bicycles. Address **INTERNATIONAL BICYCLE CO.**, Shanghai, China.

WANTED—A competent superintendent who is connected for a long time with a leading steam carriage maker is open for an engagement. Can design and construct any kind of engine or motor and owns some patents in that direction. The best of references as to ability and conduct given and will be ready to take a position at short notice in any part of the country. Address, "SUPERINTENDENT," care of Motor Age, 150 Nassau Street, New York.

Parts at a Bargain....

The advertiser offers for sale at about 40 per cent below cost the following

NEW GOODS

which were purchased for experimental purposes only:

Two 15x15 boilers, with steam superheaters, each	\$60 00
One 15-inch Milne burner with pilot light	25 00
Two water-level regulators, each	10 00
Two Locke fuel regulators, each	3 50
Two sets glass fittings, set	3 50
Two injectors, each	3 00
Two sets air and steam gauges, set	3 00
Two 6-inch gongs	3 50
Three sets water tanks, set	5 00
One 19-inch boiler and burner	150 00

All in splendid condition. Can be seen at any time in Chicago.

Address **STEAMFITTINGS,**

Care of **MOTOR AGE**, Monon Building, CHICAGO.

Catalogue Department

THE **MOTOR AGE** has established a catalogue department and will forward the catalogues of any or all advertisers on request.

The objects of this department are as follows:

1. To save the reader the trouble and expense of writing to each individual concern whose catalogue he may need.
2. To place advertisers in direct communication with prospective purchasers.

Applicants for catalogues will please state specifically the names of the concerns whose catalogues they desire and enclose stamps to cover postage.

Applications should be addressed to the Catalogue Department, **MOTOR AGE**, Monon Building, Chicago.

ADVERTISEMENTS.

IF YOU WANT CATALOGUES

Of any of the advertisers in this paper
write to ::::

THE MOTOR AGE

Monon Building, CHICAGO

CRESTMOBILE

PRICE
\$500



Agents
Wanted

CREST MANUFACTURING CO.
Cambridge, Mass.



A R B
ROLLER BEARINGS
If you are not using the A R B you are not getting the greatest possible efficiency from your machine. Send for circular.

AMERICAN ROLLER BEARING CO.
Boston, - - Mass.

Western Dept.
K. Franklin Peterson
165 LAKE ST.
CHICAGO, - - ILL.

THE BALDWIN



K. Franklin Peterson,
165 Lake St., Chicago, Ill.

BALDWIN CHAIN CO.
Worcester, Mass.

A Foot- Power Lathe and Outfit of Tools



Full Descriptive Catalogue Free on Application.
W. F. & JNO. BARNES CO., 233 RUBY ST.,
ROCKFORD, ILL.

The popularity **OLDSMOBILE** has become so of the . . . marked, that we take this opportunity to notify all imitators and infringers that, while our motor is covered by our engine and designed patents, we have a number of applications for patent upon the mechanical improvements in our device, which are allowed, covering nearly every part of the machine.

Safe for child to operate.



We have separate catalogues for Stationary and Portable Engines.

FULLY GUARANTEED.

OLDS MOTOR WORKS
50 Concord Ave., DETROIT, MICH

THE MARSH MOTO CYCLE LEADS THEM ALL.

If you want to be in the front row in the Motor Cycle business, write at once and secure the agency for the Marsh. We want live, hustling agents in every part of the U. S.

PRICE \$200. Immediate delivery. Write for our new catalogue and terms to agents.

Motor Cycle Mfg. Co. - Brockton, Mass.

DIXON'S No. 635 GRAPHITE

is the best form of graphite for lubricating engine slides and cross-heads of steam motors, and for lubricating cylinders of both steam and gasoline motors ::::

Joseph Dixon Crucible Co., Jersey City, N. J.

Our No. 5 Lathe is a right and left-hand screw cutting lathe, swings 11 inches on face plate; 34 inches between centers. Is back-geared and has hollow spindle. Has set-over tail-stock and swivel tool carriage for tapering and boring.

SPECIAL OFFER!

The list price of No. 5 lathe is \$90. We will furnish the lathe with set of slide rest tools, three lathe dogs, 5-inch chuck with two sets of jaws, lathe arbor and set of Morse twist drills $\frac{1}{8}$ inch to $\frac{1}{2}$ inch by 32nds, in all amounting to \$110, for \$90 cash. Goods carefully boxed and delivered on board cars, Rockford. This gives the best lathe made, with full equipment of tools, for less money than you can buy an inferior machine.

ADVERTISEMENTS.



DYKE'S
"WATERLIGHT"
 Saves your boiler.
 Electric Lamp, Battery and Button complete, ready to attach to any steam vehicle.

PRICE
\$5.00

A. L. DYKE, Office Linmar Bldg., ST. LOUIS.

PAN-AMERICAN STORAGE
: : : STATION : : :
SUPPLIES AND EXPERT REPAIRS.

Visiting Automobilists to Buffalo can depend on safe and courteous treatment. Fine residence neighborhood. Within a block of the Buffalo Automobile Club, and central. Can accommodate 100 Autos. Charging station and all conveniences for all styles. Charges moderate. Correspondence solicited. :: :: :: :: :: :: :: ::

Official Automobile Blue Book Station.

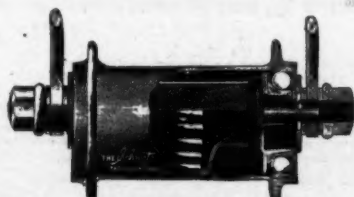
THE AUTOMOBILE STORAGE, INSPECTION & REPAIR STATION, 303 North St., Buffalo, N. Y.

Gasoline Motor Castings

Of 4 inch x 4 inch motor, described in Motor Age, \$48 with Blue Prints. Also Marine and Bicycle Motors.

LOWELL MODEL CO.
 P. O. Box 292 - LOWELL, MASS.

FIRST TIME PRIZE



Pullman
 Road Race
 July 4, 1901
 Won on this
HUB

Won First Time Prize May 30th, 1901, in Century Road Race. Reduced record, which stood for 4 years, by 30 minutes. Substantiates our claims, doesn't it? For full particulars address
F. SCHMITZ & SONS, - 560-564 Orleans Street, CHICAGO

THE CROSBY COMPANY
 BUFFALO, N. Y.

SHEET METAL STAMPINGS

FENDERS

We can quote a very interesting price on automobile fenders. Write us for

AUTOMOBILE SUPPLIES
 Eastern Automobile & Supply Co.
 67-71 Fountain Street, Providence, R. I.

The BRENNAN WATER-COOLED MOTOR ..



Manufactured 4, 5 and 7 H. P.
BRENNAN MFG. CO., SYRACUSE, N. Y.

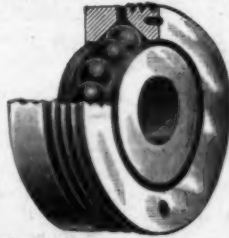
THE ROLLER BEARING
 THE EQUIPMENT COMPANY

W. S. Rogers (Late Mngr. Ball Bearing Co., of Boston) **KEENE, N. H.** Vice Pres.

MOTOR VEHICLE BEARINGS

FOR MOTOR VEHICLES

GET IT
 OUR CAT. TELLS YOU



THE BALL BEARING CO.
 BOSTON, MASS.

AUTOMOBILES

WHAT ARE THEY AND
 WHAT WILL THEY DO ?

THE MOTOR AGE
 THE AUTOMOBILE AUTHORITY OF AMERICA
 124 BROADWAY, N. Y.

ADVERTISEMENTS.

ESTABLISHED 1840.

CARPETS

C. COLES DUSENBURY & SON, Agents, 396-398 BROADWAY, cor. Walker St., NEW YORK

—AGENTS FOR CLOTH MILLS—

Visitors to Pan-American Should Stop At

Park Inn

1352 Amherst St., Buffalo. (Opposite Park Meadow.)

Beautifully situated in a grove of native oaks bordering on the extensive Meadow of Delaware Park. This is a fine modern residence, with large grounds lately occupied by the Country Club and fitted up by them, with extensive Kitchen and Porches, and interior dining rooms. A thoroughly good Cuisine is a prominent feature of the restaurant.

A few large rooms en suite, large closets, baths, etc., (sanitary plumbing) also single rooms, are now ready for guests. Special rates made to long time guests.

By accurate measurement, PARK INN is but $\frac{3}{4}$ of a mile east of Amherst St. and Delaware Ave. gate (east gate) of the Exposition grounds. The south side of Amherst street is formed by Delaware Park, thus making a delightful walk to and from the grounds.

Trolley cars running direct from Railroad Stations to the Exposition grounds pass within five hundred feet of the INN. The N. Y. C. Belt Line trains are within two blocks of the INN.

Take Main-St.-Pan-American, or Jefferson St. cars to Parkside Avenue and Amherst Street, or N. Y. C. Belt Line to Parkside Station. (Ask for "Belt" that stops there), and walk two blocks south to Amherst Street.

JOHN C. DUNHAM, Manager.

RELIANCE SAFETY WATER COLUMN

"Low Water Alarm for Steam Carriages"



Low Water in the boiler of a Steam Vehicle is particularly dangerous and expensive.

The Reliance alarm is light, strong, and easily attached. It gives the alarm before the water gets too low. Made on the same principle as the celebrated Reliance Safety Water Columns, for stationary boilers, that have been on the market for 14 years, and of which there are over 35,000 in daily use. When you buy a new steam vehicle, insist that the boiler shall be protected by a Reliance Low Water Alarm.

SAFE! SURE! SUCCESSFUL!

Bank of Sumner Sumner, Iowa, Feb. 26, 1901.

THE RELIANCE GAUGE COLUMN CO., Cleveland, O.

GENTLEMEN:—In reply to your favor of the 22d inst. asking how I liked my Low Water Alarm sent me a few days ago, I beg to advise that the same is working entirely satisfactory. I have attached it to my "Locomobile" under the seat and between the engine's muffler and the boiler. I find the space just large enough and the main braces of the carriage are just right to support the Column nicely. I have tested it in various ways and find that it will always give the alarm just as the water leaves the bottom gauge cock in my water column. I consider the alarm very substantially made, and it would seem there is nothing to get out of order or cause trouble. There is no doubt in my mind that it will save my boiler a scorching sometime in the future. Yours very truly,

Signed, J. F. CASS, Vice Pres.

RELIANCE GAUGE COLUMN CO., Sole Mfrs.

Write for prices.

85 E. Prospect St., Cleveland, Ohio.

CHICAGO OFFICE, 79 LAKE STREET.

• BUFFALO'S MOST LUXURIOUS HOTEL •

The Lenox

North St., Near Delaware Ave.

ABSOLUTELY FIREPROOF.

Located in the most aristocratic section of the city and of all permanent hotels is nearest to the **Pan-American Exposition**. A strictly high-class and thoroughly modern hotel, conducted for those who want the best.

EUROPEAN PLAN.

GEORGE DUCHSCHERER - PROPRIETOR.

Headquarters: BUFFALO AUTOMOBILE CLUB.



Yellowstone Park...

Extended tour, leisurely itinerary with long stops in the Park. Private coaches for exclusive use on the drive. Pullman sleeping and dining cars. Established limit to number going. Escort of the American Tourist Association, Reau Campbell, General Manager, 1423 Marquette Building, Chicago. Colorado and Alaska tours also.

Tickets Include all Expenses Everywhere.

Train leaves Chicago via Chicago, Milwaukee & St. Paul R'y., Tuesday, July 9, 10:00 p. m.

NEW WABASH EQUIPMENT.

The Wabash Railroad has just received and placed in service on its lines running out of Chicago the following new equipment:

Eight combination baggage and passenger coaches, thirty palace day coaches, ten reclining chair cars, three cafe cars and two dining cars. The majority of these new cars are seventy feet in length, and fitted with the latest style wide vestibules. They have six-wheel trucks with steel wheels. The cars are finished in the finest selected Jago mahogany. The lighting is by Pintech gas with the exception of the cafe, dining and some of the chair cars, which are unusually well lighted by electricity, the fixtures being especially designed for these cars. The dining cars will seat twenty-nine persons and have ample kitchen space. The cafe cars will seat eighteen persons in the cafe, and have a library and smoking room in the observation end of the car which will seat fourteen persons. These cars also contain a private cafe with seating capacity for eight persons. These new cars represent the highest stage of the development of modern car building. Nothing has been omitted and no expense spared that would add to their luxurious elegance, or to the comfort and convenience of the patrons of the Wabash road.

No line is now better equipped than the Wabash for handling business to the Pan-American Exposition. Write for a copy of Pan-American folder containing a large colored map of the exposition grounds and zinc etching of the principal buildings.

F. A. PALMER,
Asst. Gen. Pass. Agt., Chicago, Ill.

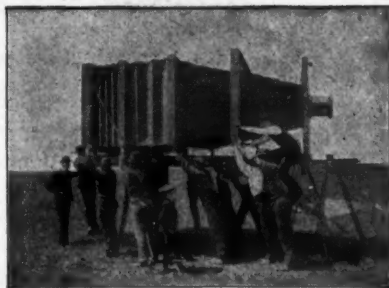
Faster than ever to California

CHICAGO & NORTH-WESTERN RAILWAY

THE OVERLAND LIMITED leaves Chicago 6:30 p. m. daily via Chicago-Union Pacific and North-Western Line, arrives San Francisco afternoon of third day and Los Angeles next morning. No change of cars; all meals in Dining Cars. The Pacific Express leaves 10:30 p. m. daily. Personally conducted excursions every Thursday from Chicago and every Wednesday from New England. Inquire of any ticket agent or address

461 Broadway, New York; 601 Chestnut Street, Philadelphia; 368 Washington Street, Boston; 301 Main Street, Buffalo; 212 Clark Street, Chicago; 435 Vine Street, Cincinnati; 507 Smithfield St., Pittsburg; 234 Superior Street, Cleveland; 17 Campus-Martius, Detroit; 2 King Street, East Toronto, Ont.

LARGEST CAMERA IN THE WORLD



WAS CONSTRUCTED ESPECIALLY
BY ORDER OF THE

CHICAGO & ALTON

RAILWAY, TO PHOTOGRAPH
THE ALTON LIMITED.
SEND A 2c. STAMP TO GEO. J. CHARLTON,
G. F. A., C. & A. RAILWAY, CHICAGO, ILL.,
AND RECEIVE AN ILLUSTRATED PAM-
PHLET WITH FULL ACCOUNT OF THE
FIRST EXPOSURE MADE WITH THE EX-
TRAORDINARY MACHINE.

THE Locomotor Steam Carriage

IMMEDIATE DELIVERY



The following improvements will be appreciated by automobile purchasers: Low water alarm; four bearing engine entirely enclosed running in oil; extra heavy side steer; hand auxiliary pump; air pressure pump; auxiliary throttle; stop for brake lever; double acting brake; feed water heater; electric illuminator for gauges and water glass; heavy frame; roller bearings on rear axle; 30-inch wheels; option on tires, etc., etc.; Kelly Handle Bar generator attached to all vehicles without extra charge. Of the large number of our vehicles in daily use, not one has ever had the boiler scorched.

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DELIVERY WAGONS.

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"Motorette"

COMPANY.

Sole American Agents and Licensed Manufacturers for
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DE DION "MOTORETTES"



ARE THE STANDARD OF THE WORLD

Thousands of Satisfied
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FOR FLUSH-JOINT FRAMES

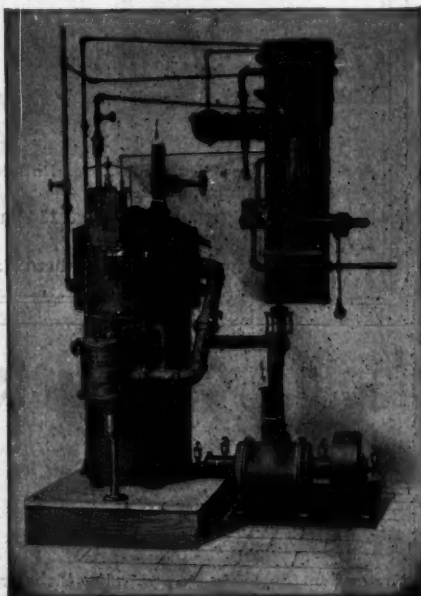
{ Flush head sets with cap nut
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FOR EXPORT BICYCLES

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Seat Post Bracket with bolt and nut
Cotter Pin Hanger—square cranks

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THE GARLAND

Automatic Gas
Generating Apparatus

FOR AUTOMOBILE FACTORIES

ANY CAPACITY, GREAT OR SMALL

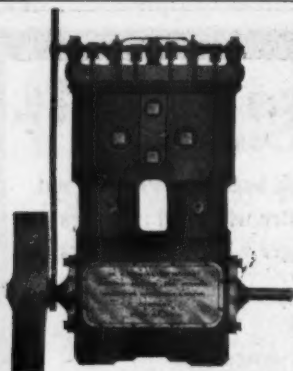
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Gas of required density without use of supplementary air blast.
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Vaporizes every particle of oil.

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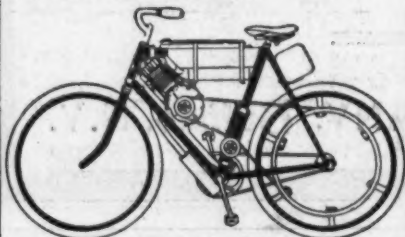
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Write us for catalogue of complete automobiles.

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1 mile—1 minute, 22½ seconds
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were made at Buffalo, Saturday, Aug. 17,
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AUTO-BI

with our regular 1½ I. H. P. motor

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with a motor three times the weight and
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motor cycle makers—that of leader and the
maker of the best—the AUTO-BI.

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of today sells carriage and automobile
tires as well as cycle tires—at least he
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Fisk Vehicle Tires

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EASY RIDING
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Wheels are the acme of perfection for Automobiles. Save money,
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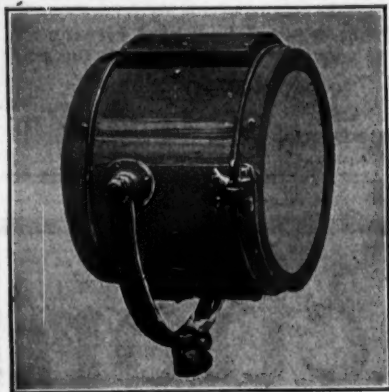
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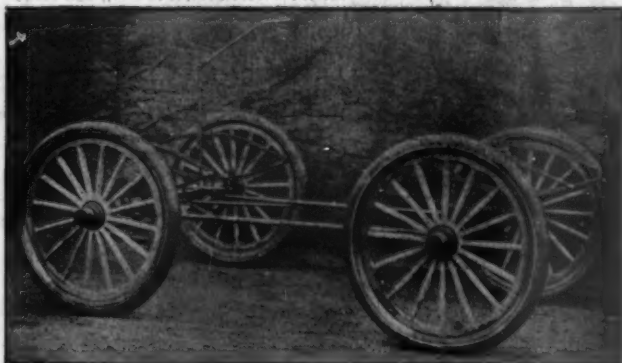
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Automobile Running Gears



Get a running gear that is past the experimental stage and build a **SUCCESSFUL AUTOMOBILE**. We make two styles complete with springs and wood wheels, solid rubber or pneumatic tires.

OUR SPRING BLOCK BEARING IS SELF-ADJUSTING

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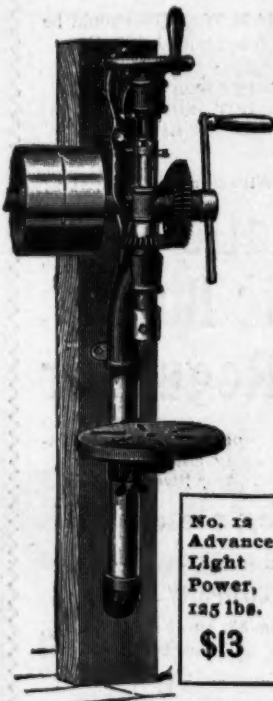
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Light draft,
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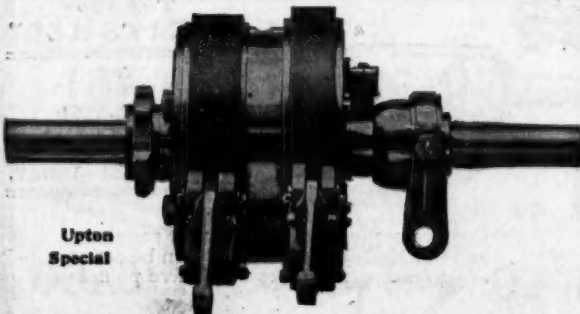
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"The Milwaukee" has an air pump working on the cross-head of the engine. It maintains the required air pressure at all times, and unless you are anxious to work up your muscle with a hand pump, you will before buying any other steam carriage, inquire about this, of the

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Satisfaction guaranteed
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IS THE BEST**

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Operating a STEAM WAGON should be a PLEASURE and not a LABOR.

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WATCHING WATER GLASS
BURNT-OUT BOILERS
KNOCKED-OUT CYLINDER
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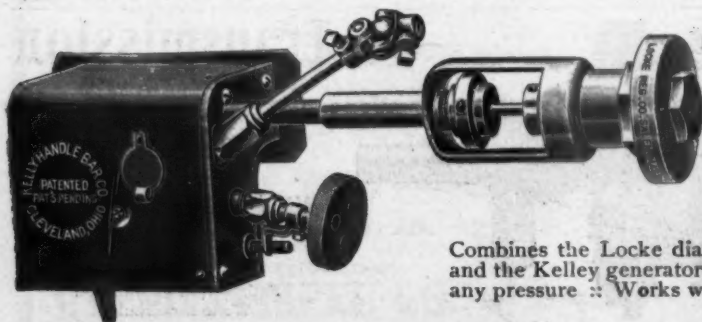
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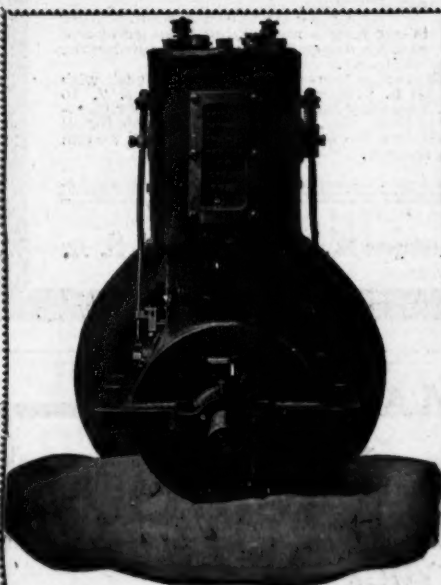


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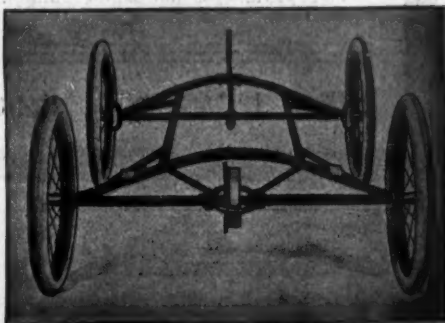


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<p>THE BEST SELLING CYCLING SUNDRY</p> <p>INEXPENSIVE AND ALWAYS IN DEMAND</p> <p>The price catches buyers. Handsomely finished. Mounted on attractive cardboard for show purposes.</p> <p>THOUSANDS ARE BEING SOLD DAILY</p> <p>The little article can be attached or detached in a second. Send for sample, price and particulars...</p> <p>THE MIDGET MFG. CO. ::: BUFFALO, N. Y.</p>															
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